THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. 82. NEW YORK, SATURDAY, MARCH 14, 1903. NO. 11.

ORIGINAL ARTICLES.

THE ETIOLOGY OF COLDS.

BY JAMES J. WALSH, PH.D., M.D.,

OF NEW YORK;

LECTURER ON GENERAL MEDICINE AT THE NEW YORK POLYCLINIC HOSPITAL AND SCHOOL, NEW YORK CITY.

THE word cold is probably the most used and the least understood in the practice of medicine. Ordinarily, from its etymology, the word is presumed to mean an ailment caused by changes in temperature and especially by severe cold weather. Usually the seat of the affection is the respiratory tract, and a cough is one of the accompaniments of it. We speak at times, however, of a cold in the bowels, or even a cold in a muscle. The result in both cases being painful sensations. While it is supposed that low temperature has much to do with the process known as catching cold, most people are well aware that those who live in a dry, very cold climate as, for instance, our Canadian neighbors, are not so subject to colds as those who live in a moist, changeable climate, and that the inhabitants of the elevated regions of Switzerland are less subject to colds than their compatriots of the same race in the lower levels of the country.

It is even related that while Nansen spent two winters at the extreme north with a temperature for over three months of the year uniformly lower than 30 degrees below zero, he never contracted a cold, nor did any of his men. He had returned to civilization scarcely more than a week when himself and two of his companions were confined to their rooms for several days with grippy colds. It cannot be said either that changes of temperature are the important etiological element, for there are rather extensive daily variations of temperature in the Arctic region and in high mountains. In fact, it is generally recognized now that the most favorable therapeutic effect of climate for the consumptive consists in the daily rhythm of temperature variations which does more than anything else to stimulate and excite the vital reaction that enables a tuberculous patient to throw off the depressing ailment. Burney Yeo said last year at the British Congress for Tuberculosis that this effect was not obtained unless the daily temperature variation was at least 20 degrees.

It is evident then that we shall have to look elsewhere than in mere low temperature for the cause of colds. The old name for the affection was "rheum." This indicates much better than cold what was meant by the condition. Rheum signifies a fluxion or flowing that is an excess of secretion. An ordinary cold represents, then, a reaction of mucous membranes, sometimes of serous membranes, with a consequent increase of secretion. Colds may exist either in the respiratory tract, in the digestive tract, or, occasionally, in the large joints or in the serous cavities of the body, for pleurisies and peritonitis are sometimes said to be due to cold.

In explaining the etiology of these states of increased secretion it is necessary to consider several elements. The excess of secretion usually represents serum from the blood as well as mucus. In order that this serum may find its way out of the blood vessels an excess of blood must go to the part. This may be produced either actively, that is, by the presence of some irritant which causes hyperemia and so active congestion, or by some disturbance of the circulation that causes passive congestion of the part. Over a century ago Erasmus Darwin pointed out that when portions of the surface of an animal's body are made cold and are kept so for prolonged periods there is a loss of tone in the blood vessels of the part with consequent dilatation and the circulation becomes very much slowed. The eventual result is that even after external warmth is restored to the parts a persistent paralytic dilatation of the blood vessels remains that leads to passive congestion.

Such disturbance of circulation in a large skin area cannot take place without corresponding disturbances of the circulation of the interior of the body. The amount of blood in the system is nicely accommodated to the ordinary needs of the organism, but compensatory mechanisms exist by which, when necessary, a large amount of blood may be drawn to the surface and the skin capillaries, or may find its way into the abdominal veins. Under prolonged abnormal conditions congestions result from these disturbances and a state rather favorable to the multiplication of microbes is produced in the tissues.

Head pointed out some years ago in a series of very acute and carefully made observations that when affections of internal organs exist certain skin areas become more sensitive than usual. It is over these skin areas that counter-irritation must be made for therapeutic purposes when the connected organs give the indication. It should be borne in mind then, that whenever the counter-irritating effects of cold are unconsciously or unintentionally applied to such skin areas underlying organs with which they are sympathetically connected are affected. It is in this way, doubtless, that draughts, that is the continuous blowing of cold air for some time over a localized portion of the body, produce their pathological effect.

The sympathetic vasomotor system is a very delicate contrivance meant to produce compensatory changes in the circulation at times when they are needed, but that like all complicated

mechanisms may get out of order as the result of unusual factors. In delicate persons the reactions of the vasomotor system are especially liable to be sensitive and the mechanism itself is prone to become disarranged. It is in such persons especially that draughts have their influence. Cold air alone, however, will not produce bad effects, as we have learned over and over again from recent experience in sanatoria for consumptives, where patients get along very well in sleeping rooms with the temperature almost constantly not far above the freezing point.

As a matter of fact, during recent winters in London a number of tuberculous patients were kept constantly on the balcony of one of the large hospitals and this continuous living in the open air, though it was the foggy, moist, unpleasant air of London, proved the best possible remedy for such annoying conditions as constantly recurring pleurisy, hemorrhage that had proved so severe and frequent as to threaten life, and a tendency to cough that could not be overcome by any other means. In the sanatoria in the various parts of the Alps patients' rooms are almost constantly at temperatures so low as to require extra covering and even the wearing of gloves and hoods for comfort.

Cold is then evidently only the predisposing cause for the contraction of colds and other elements are the direct etiology. Undoubtedly bacteria of various kinds enter largely into the problem. Occasionally the breathing in of irritating substances, whether vapors or fine dust, may give rise to a catarrhal condition that resembles a cold. It is not surprising to find that the affection called an ordinary cold is due to microbes, and the etiology thus suggested is no far-fetched endeavor to submit this ailment also to the germ theory.

A number of affections that are at present recognized as distinct were formerly grouped under the word cold. Many of them are now known to be due to specific micro-organisms. Pneumonia, for instance, was formerly a cold on the chest; tonsillitis, even of the diphtheritic form, was, considerably less than a hundred years ago, still a cold in the throat. It was from a severe cold that Washington died, though it seems clear now that the real affection was diphtheria. Rheumatism, that until very recently was considered surely the consequence of dampness and exposure, is now generally conceded to be a specific infectious disease, with a distinct incubation period, self-limitation and probably a specific micro-organismal cause. Cold is in this affection only a predisposing factor.

It would seem worth while then to consider various forms of cold from the standpoint of what we may learn as to their etiology and prophylaxis on the hypothesis that they are due to microbic invasion.

So-called colds in the head or rhinitis is a catarrhal inflammation of the mucous membrane of the nose, and is almost surely due to bacterial invasion. Many people are especially liable to attacks of rhinitis. Specialists in rhinology tell us that in these cases there is always some pathological condition, such as a hypertrophy of the turbinate bones, a deflection of the septum, a spur on the septum, or the presence of polypi to cause a tendency to congestion of the nasal tissues. As a consequence of this pathological condition the delicate mechanism of the nose is disturbed and bacteria that are constantly finding their way into the mucous membrane but are disposed of by natural process under normal conditions find opportunities for growth.

It must be remembered after all that the nose is much more than the mere organ of smell. Its main purpose is to warm the air before it is admitted to the lungs. For this purpose the passages of the nostrils are tortuous and are lined by a mucous membrane that is especially rich in blood vessels. These passages are rather small in caliber and, in states of congestion, may be almost obliterated. When pathological conditions are present, one of the nostrils may easily become blocked up, and the consequent failure of ventilation soon leads to the collection of serum, on which microbes grow rapidly, while the effort to throw off the affected mucous cells gives a nidus for the growth of bacteria in the tissues themselves.

Under these conditions nature's compensatory mechanism asserts itself. There is a free flow of serum from the nose, in which numbers of bacteria are carried off. It is evident then that at the beginning of such a cold at least nothing should be done to prevent this flow of serum. Later on in a cold the mucous tissues seem to have acquired the habit of allowing serum to escape and secreting more mucus than usual, and then belladonna or some such preparation may be employed. The indication is evidently to restore the ventilation of the nostrils by drugs that will tend to decrease the congestion yet without interfering with nature's effort to remove the bacteria present on the mucous membrane. When such congestion is relieved, cleansing remedies that will serve the purpose nature intended should be applied rather freely.

The intranasal structures are, as we have said, extremely delicate, and modern life in our large cities compels it to do its work under especially difficult conditions. Most of our houses are heated by steam or hot water. This makes no provision at all for the supply of moisture necessary to keep the air of closed living-rooms in the properly humid condition. Air at a temperature 40 to 50 degrees will hold a certain amount of water. From 60 to 70 degrees it will take up nearly twice as much water. If the moisture is not present in some available form the air will take it up, as most of us city folk know, from the joints of furniture, from door trimmings, from plants and also from ourselves. The consequence is that the air breathed in and out takes up an immense amount of moisture from the mucous membrane of the nose. Under ordinary circumstances it is said that over a pint of fluid is given

off through the respiratory mucous membrane during twenty-four hours. It is probable that this is doubled under the abnormal circumstances of steam or hot water heating, if a certain amount of steam is not being constantly allowed to escape into the air. This keeps the mucous membrane in a continuous irritable condition and predisposes it to catarrhal affections of many kinds. Almost inevitably microbes find their way into the mucous membrane, and, as this is lacking in resistive vitality, the consequence is that an inflammatory process, which is not really a pathological condition at first but nature's protective effort to get rid of the intruders by producing a free flow of serum and mucus before they succeed in finding lodging in the tissues, takes place.

Not infrequently pharyngitis and tonsillitis will be found to follow mouth breathing of cold air when, because of unusual exercise, the patient gasps for breath. A story of having run for a car or walked very rapidly so that the number of respirations went up very materially and mouth-breathing became a necessity, will be found to have preceded the development of the first symptoms of the affection, by from twenty-four to forty-eight hours.

It is well known that there are constantly in the mouth a number of more or less pathogenic bacteria. So long as the resistive vitality of the tissues remains normal they produce no pathological effects When the faucial tissues are blanched by the free access of cold air in large quantities, as happens when the mouth is opened to breathe during severer exercise than usual, the resistive vitality is distinctly lowered.

Such affections are especially liable to follow if the individual has come out of an overheated room in which there are a large number of people assembled or in which there has been considerable dust present, because of the movement of the crowd, dancing or gymnastic exercises. Under such circumstances if a run for a car or a rapid walk with the idea of avoiding the taking of cold by this exercise be attempted some affection of the pharynx or tonsils will almost inevitably follow. Large numbers of bacteria have been breathed in during the stay in the warm room and have collected on the mucous membrane of the pharynx, whence they would gradually have been removed by swallowing, and subsequent digestion in the stomach would have made them harmless, but the almost traumatic effect of cold air gives them favorable locations for growth.

The blanching of the mucous membrane by the sudden access of cold air leaves it in a lowered state of vitality and when the subsequent reaction sets in a large number of the upper layers of cells are thrown off and a disturbance of the mucous covering that allows the penetration of microbes into parts where they easily obtain a plentiful supply of blood serum, because of the congestion that follows, becomes possible.

It is, however, for affections of the respiratory mucous membrane below the larynx that the presence of bacteria in the breathed air is most important. It will usually be found that an attack of bronchitis or of pneumonia was preceded by a visit to some place in which there was a large crowd of people—a theater, a church, a dance hall, a railway station, a political meeting-place, or some such assembly. After sitting for some hours in the usually overheated atmosphere of such places, where the absence of moisture in the air is apt to be a very noteworthy element of the atmospheric condition, people proceed at once to the colder outdoor air.

There is usually a large collection of manifold forms of bacteria in the upper air passages. The nose particularly is loaded with them, and unless the individual is in excellent health the breathing of very cold air leads to a blanching of the mucous membranes of the nose. As a consequence of the absence of blood they become somewhat dry and, occupying less space, air may be drawn almost directly into the lungs, carrying with it some of the bacteria that were lodged in the nasal passages.

It is evident that if such affections are to be avoided much more care will have to be taken than at present of the dust that is liable to collect in places of meeting. Theaters, churches and public halls will have to be very carefully dusted, and the common practice of having them carpeted will have to be given up for the more hygienic custom of rugs that can be thoroughly cleansed at frequent intervals. The dusting of such places will have to be done at times that will permit of the thorough settling of dust and its removal by damp cloths many hours before the crowd assembles.

Another important prophylactic measure that will probably have to be maintained is the construction of such places so that they can be exposed to the action of sunlight. At the present time most of these assembly places are so constructed that a ray of sunlight practically never penetrates them. Sunlight is the great bactericide and would do more than any other hygienic precaution to prevent dust from bearing pathological micro-organisms.

With regard to personal hygiene, delicate individuals will have to be warned of the necessity for avoiding such places, and those of stronger constitutions who notwithstanding the fact are liable to suffer from frequent colds should be advised not to leave these warm rooms where they have been in contact with many other people without a preliminary delay for some time in the cooler air of the corridors, or in the case of the theater, in the foyer. The foreign theaters, and continental social usage particularly, are much better arranged for this purpose. It is not the custom for the audience of a theater to leave immediately and rush into the outer air, but they spend some time in friendly conversation with acquaintances and thus perhaps unconsciously and unintentionally prepare themselves better for meeting the cold air.

This same precaution may seem an exaggera-

tion of care when applied to houses, but the custom of lingering for a few minutes in the hall and in the doorway until the mucous membrane of the respiratory passages has accustomed itself somewhat to the colder air, so that there is not a sudden change from air at a temperature of 70 to 80° F. to a temperature of 20 to 30° F. is extremely advisable. Healthy individuals need no such precaution. Delicate ones, however, frequent subjects of colds, will accomplish much in avoiding some of the habitual valetudinarianism of the winter season in this way.

There is no doubt that at times as the result of exposure to cold or to a draft, muscles become the seat of considerable discomfort. Muscles of the neck and of the shoulder are particularly liable to be affected. These are sometimes spoken of as colds in the muscles, though more often the words neuralgia, or rheumatism, are used in this connection. The mechanism of the affection seems to be that the continuous application of cold from sitting in a draft leads to a paralysis of the vasomotor mechanism in the parts. As a consequence of this a congestive dilatation of blood vessels follows, affecting especially the capillaries. Delicate nerve endings that for proper function require to be kept in a state of the best possible nutrition are thus deprived of some of the nutritive elements that have been so constantly flowing by in the blood stream. It is not surprising then that there should be some sensory disturbance and, as a consequence of the pain, an inability to use the muscles.

It must not be forgotten, too, that all muscles move over other muscles in performing their function. This movement over one another is facilitated by planes of fascia and muscle coverings which partake almost of the nature of serous or articular membranes. It takes but very little disturbance of the circulation to cause a deterioration of the moist glistening surface which enables muscles to move with as little friction as possible. The passive congestion spoken of as a consequence of cold easily interferes with this delicate mechanism. This seems to be a cold, in the ordinary sense of the word of the mechanical effect of exposure. Its more frequent occurrence in the nervously inclined, the underfed, the overworked and the alcoholic shows its pathogenic basis in an instability of nerves, though at times a true myostitis seems to be the basis of the condition.

A very striking indication that a cold is due to microbic invasion is to be found in the fact that the process is nearly always accompanied by fever. This is due to an absorption of toxic materials into the circulation which disturbs the heat regulating mechanism. This mechanism is one of the most delicate in the body, and in cold weather, particularly when, despite a difference of 50 or 60 degrees between the body temperature and that of the outer air, the bodily temperature must be constantly maintained, is rather easily disturbed. The presence of fever is indicated by chilly feelings that may sometimes go even to the extent of an actual chill. Very often patients are sure that this is the beginning of a cold, so-called, though in reality a little inquiry will usually show that they have felt uncomfortable for some forty-eight hours or more before.

Not infrequently the origin of the cold is ascribed to some incident exposure, to cold or dampness, or a draft that is supposed to have had its effect a few hours or at most a day before the chill asserts itself. This is nearly always a mistake. A distinct incubation period can be traced and the efficient cause of the illness is commonly farther off than the patient imagines.

The occurrence of fever and chilliness gives an indication also for the first step in treatment. Since there are toxic materials in the blood, the eliminants and especially the emunctories of the body must be made active. Kidneys, skin and bowels serve to carry off from the circulation a certain amount of the toxic material present. The old custom of giving calomel and a hot drink, especially hot cream of tartar lemonade, which acts as a diuretic as well as a laxative and a diaphoretic at the beginning of the affection, is almost sure to make the patient more comfortable and may unload the system of enough depressant toxic material to enable it to react and bring about the abortion of the cold.

On the other hand the use of remedies that tend to lock up secretions at the beginning of a cold is almost sure to be harmful. If the cold is in the intestines free purgation that will remove irritant material is the best possible remedy. Where the cold exists in the respiratory tract, nature's protective effort to get rid of microbic invaders by an excess of secretion of mucus and the pouring out of serum from the blood vessels is the best possible means to shorten the course of the affection. A free flow of serum and mucus and the consequent necessity for expectoration or frequent cleansing of the throat and nose is not convenient, but to lessen this is almost sure to lengthen out the discomfort eventually. In the old, particularly, it is important to second nature's efforts in this respect and not encourage the accumulation of secreted material by the use of quiescent drugs. Great harm is undoubtedly done in this respect by the routine prescription of traditional remedies containing opium. This substance should not be employed except where the racking effect of cough seems, after due deliberation, likely to be a more serious evil than even the retention of microbic toxins.

Physiological Salt Solution.—This term has come to be rather indiscriminately applied to solutions of sodium chloride in water varying from 5 per cent. to 1 per cent. In a recent communication, F. ENGELMAN (Deut. med. Woch., Jan. 22, 1903) shows from a study of the findings of later investigators, that the only solution which is isotonic with human serum or is perfectly indifferent is that containing 0.9 per cent. of sodium chloride. The employment of a solution for medicinal uses should therefore be restricted to this particular strength and a new expression coined or the exact percentage of a given solution should always be stated.

SURGICAL TREATMENT IN NON-MALIGNANT DISEASES OF THE STOMACH: RESULTS AND INDICATIONS.*

BY HENRI HARTMANN, M.D.,

OF PARIS, FRANCE;

ASSOCIATE PROFESSOR IN THE FACULTÉ DE MEDICINE DE PARIS. SURGEON OF THE HOSPITAL LARIBOISIERE.

THE question of the operative treatment of some non-malignant diseases of the stomach is still under discussion. I shall now publish the reflections† suggested by the study of 60 patients, upon whom I have operated for benign diseases.

Immediate Results.—Of the 60 operations, 10 have been fatal, 16½ per cent.‡ If I divide my statistics into two periods they show that, in the first period (1895-1899), out of 23 cases six were fatal, 26 per cent. In the second period (1900-1902), out of 37 cases, four were fatal, 10.5 per cent. Consequently, my operative mortality has been greatly diminished. However, I have had bad cases resulting from the ignorance of many of our physicians, who, not knowing the results of operations, test their patients by medical means, thus weakening them and only advising operation when they are almost moribund.

When taken in time the operation in the benign diseases of the stomach gives very good results. I can prove that very easily if, instead of dividing my statistics into two periods, I divide them into two parts: (1) The first includes the patients sent to me by physicians well informed on the disorders of the stomach. For example, Professor Hayem and my colleague Soupault; (2) the second includes the patients sent to me by other physicians, generally too late. We see that, in the first division, out of 36 cases one alone was fatal (2.77 per 100), and that, in the second division, nine were fatal (26 per 100).

This remark proves most evidently that *the mortality in the operations for non-malignant diseases of the stomach depends almost entirely upon the physician and the early diagnosis.*

Remote Results.—To ascertain the remote results I made inquiry as to my former operations and found 29 patients who had been operated upon from one to six years ago. One pylorectomy was quite well after 18 months. One gastropexy and gastrorrhaphy combined, in a case of atonic dilatation and gastroptosis with cachexia, was completely cured after two years.

Out of 18 gastro-enterostomies for pyloric stenosis§ (great dilatation of the stomach, vomiting after meals, for two or three days, splash on succession of the abdomen, particles of food in the stomach when the contents were siphoned off before breakfast, etc.) 16 patients were cured, eating everything, following no treatment at all, and two patients considerably improved. In one of these last cases, there were no particles of food in the stomach before breakfast, but pain in the stomach; in the second, the patient increased 12 kilos (27 pounds) in weight, but was obliged to diet.

Three gastro-enterostomies (assisted by Dr. Soupault) performed on patients not cured by medical treatment, who suffered from hyperacidity and who presented the symptoms that I have described under the name of the pyloric syndrome (pain and dyspeptic troubles arising three or four hours after meals without arrest of food and without hypersecretion of gastric juice) were successful. The patients are entirely well after a period of one to 3½ years.

Four gastro-enterostomies were performed on patients who suffered from hyperacidity and from pyloric syndrome without arrest of food, but with hypersecretion (gastrosuccorhea). These had no return of their disease, two after two years, one after 2½ years, and one after three years.

Two gastro-enterostomies for moderate hemorrhage, recurring many times, after the elapse of more than two years were cured.

The prolonged observation of these patients proves that we have not only successful operations in the non-malignant diseases of the stomach, but real and permanent benefit.

Indications.—We will have such success, operative as well as therapeutic, only as we follow some special indications. We do not accept the opinion of surgeons who say that operation is good in every case of intractable dyspepsia. If this practice is followed, a successful operation often results in therapeutical failure. My pupil, Leroy, in his inaugural dissertation, has published some therapeutic failures taken from the practice of other surgeons. Generally the mistake comes in those cases of nervous dyspepsia. It is necessary to make a correct diagnosis.

Atonic dilatation is rarely an indication for surgical interference. Out of my 60 cases there is only one such case. These stomachs have deficient peristalsis, and do not empty themselves in a normal time, but when the contents are siphoned off before breakfast, no particles of food will be found. These cases can be cured by medical treatment, combined with a Sangle de Glénard when, as it frequently happens, the atonic dilatation is associated with gastroptosis. About this special point I agree with the physicians, especially with Professor Hayem and with my friend Soupault.

I think that in pyloric stenosis the operative treatment is indicated so soon as the diagnosis is made, and I cannot understand the distinctions made by many physicians between nervous strictures and those in which the physician can relieve the painful symptoms for a time by diet. The

*Read before the Congress of the French Surgeons, October, 1902.

† I shall not speak about six operations for perforation of gastric ulcer with general peritonitis (three died, one cured), these operations belonging to quite a different class.

‡ These 60 operations include three pylorectomies; one excision of ulcer of the lesser curvature; one resection of a band constricting the pylorus; one duodenostomy in a case of inflammatory and ulcerative lesions due to burns; one gastrorraphy and gastropexy combined; 53 gastro-enterostomies.

§ In 16 cases the stenosis was the result of an ulcer, partially or entirely cicatrized; in one the result of a burn of the pylorus; in another the stenosis was on the duodenum and a sequence of cholecystitis with periduodenitis.

cause remains, the patients weaken by degrees, become consumptive, and finally are obliged to go to the surgeon. But instead of coming in good condition, and running no more operative risk than the man who has a hernia, they are more or less cachectic and often succumb to pulmonary complications.

Why not operate when it is simple and sure? Has any one the idea that an urethral stricture should be treated by potions and diuretics? The lesion is, however, the same. In both cases it is a fibrous stricture. Medical treatment cannot cure the stricture and the condition will gradually progress and the later the operation the worse will be the result. The operative mortality would be reduced to nearly nothing if we had not to operate on patients thus weakened by too long waiting. We ought then to be absolute in our statements that all fibrous pyloric strictures ought to be operated on immediately.

We must not be so absolute, however, in the case of ulcer of the stomach without pyloric stenosis.

The acute ulcer, without any complications, is cured by medical treatment, when this treatment is sufficiently severe.

In chronic ulcer I think that surgical treatment is indicated only in the case of an ulcer with mechanical troubles, and in those of an ulcer which is situated on the pylorus and which gives the pyloric syndrome. Delay is of no avail. Even if the ulcer be cured, this cure will be followed by a fibrous stricture more serious than the spasmodic troubles from which the patient previously suffered. Without wishing to prejudge the exact nature of the hypersecretion of gastric juice, without affirming that all such cases have, like some of those on whom I have operated, an unrecognized ulcer, I think that hypersecretion or hyperacidity associated with pyloric syndrome, is an indication for the operation.

I do not agree with the surgeons who say that excessive hematemesis needs an operation. The operative mortality is high, the cure by medical treatment frequent. On the contrary the *small* and repeated hematemesis require a surgical treatment.

When one has decided upon an operation, the question arises: *Which is the best?* I do the gastrectomy only in those cases in which I fear an epithelial grafting (in four cases out of 60). Pyloroplasty of the German surgeons is not possible in cases of ulcer or of fibrous strictures of the pylorus, in consequence of the rigid state of the tissues. Indeed, after all, pyloroplasty does not completely empty the prepyloric pouch when it is much distended, which is a frequent occurrence. The rôle of pyloroplasty is a very limited one, and I do not perform this operation.

Gastro-enterostomy seems to be, in the non-malignant diseases of the stomach, the best operation. With the very simple technic that I have described in my *Chirurgie gastro-intestinale*, I have not observed one case of circulus viciosus in my 53 operations.

THE ETIOLOGY OF ECTOPIC GESTATION.*

BY SAMUEL WYLLIS BANDLER, M.D.,
OF NEW YORK CITY;
INSTRUCTOR IN GYNECOLOGY, NEW YORK POST GRADUATE MEDICAL SCHOOL.

IN former years our views concerning the origin of ectopic gestation depended mainly on the discovery of pathological conditions macroscopically evident. Cases were reported with fibroma of the isthmus tubæ or with polyps at the uterine end of the tube. The growth of the ovum in a tubal diverticulum or in an accessory tube was considered to furnish a satisfactory etiology. In some cases the pressure of ovarian or abdominal tumors was supposed to obstruct the onward movement of the ovum. Abel and Freund found in a twisting of the tube and in a failure of development a satisfactory theory for the frequent occurrence of ectopic gestation. Since, in a majority of such cases, peritoneal adhesions are present, these were, and even yet are considered to so alter the course of the tube's lumen as to prevent the entrance of the ovum into the uterus. Therefore, visible inflammations were considered to be the important etiological element.

During the summer Dr. A. Brothers gave me a specimen of extra-uterine gestation combined with a multilocular serous ovarian cyst, with the request that I should find, if possible, a corpus luteum verum in the ovary, though he believed none to be present. We considered that this specimen would furnish a proof of external migration of the ovum and that this migration might stand in an etiological relation to the ectopic gestation. Examination of the ovarian cyst showed no Graafian follicle. Therefore the ovum had come by external migration from the other ovary. In three other cases the absence of a corpus luteum verum on the pregnant side was noted.

The experiments of Leopold have shown that the ovum given off by one ovary may enter the tube of the other side. The cases are not so rare in which the tube of one side was closed or absent, and although the corpus luteum verum was found in the ovary of the same side, yet the ovum was found in the uterus. Schröder, Koblanck, and others have found a pregnancy in a rudimentary horn between which and the uterus no epithelial connection existed. Manierre has collected 39 cases of pregnancy in rudimentary horns. The same is true of those cases in which the corpus luteum verum is on one side and the ovum has developed in the horn of a uterus unicornis of the opposite side. Küstner removed a right-sided extra-uterine gestation sac and left-sided ovarian cyst shortly after a uterine pregnancy took place.

External migration occurs frequently in tubal gestation.—Although Küstner took note of the frequency of this event in only the last 25 of a series of 100 cases, it proves to have taken place in seven. Prochownik found that external migration had taken place in one case of eight which

*Read before the Obstetric Section of the Academy of Medicine, October, 1901.

he had examined closely. Martin found the corpus luteum on the same side as the tubal gestation in 37 cases, on the opposite side in four, and uncertain in 36.

External migration of the ovum has been viewed by Sippel and others as the etiological factor. They believe that the ovum in its migration becomes too large to permit of its passage through the tube lumen. The examinations of Peters, and especially of v. Spee, however, show conclusively that no chorionic villi are present until the ovum has been nourished for a considerable time by the decidua in which it is embedded. In addition, the Graafian follicle is in the majority of instances found in the ovary of the affected side, so that such an etiology would explain only the smaller number of cases.

This migration, however, calls our attention to the presence of a pathological condition in the mucous membrane of the opposite non-pregnant tube. While it calls our attention to the fact that the other tube is affected it only proves that it is more affected than the tube in which the ovum is finally embedded, for some cilia must be present in the latter to influence the external migration of the ovum. Various experiments make it seem probable that in the perfectly normal tube no ovum can develop.

Küstner, in his experiments on rabbits, extirpated one ovary and extirpated or tied off the uterine horn of the other side. In these attempts no extra-uterine gestation resulted. However, since such a pathological point of development of the ovum does occur in animals, a satisfactory explanation of the failure of these attempts could not be found until the experiments of Mandl and Schmit were published. In their work upon animals they found the following to be the case: After coitus, and after the lapse of time sufficient to permit union between the ovum and the spermatoza at the abdominal end of the tube, they tied off the tube at the uterine end. Their results were negative. No tubal gestation resulted. When, however, the uterine horn was tied off a pregnancy in this horn resulted, showing that the ligation was not the disturbing factor and that in all probability ova do not develop on a normal tubal mucosa.

In considering the history of those cases which have been closely noted it is found that ectopic gestation occurs most frequently in multiparæ and that a sterile period of varying length precedes this pathological development. Martin found that 65 multiparæ were affected as compared with 20 nulliparæ. In a series of 100 cases of Küstner's only 10 ectopic gestations occurred in nulliparæ. The other 87 had borne children and 3 had aborted. In 24 cases it occurred five or more years after the last labor; in 55 cases, from one to five years after; and in eight, in less than twelve months. Veit found that in 52 cases of *repeated ectopic gestation* a sterile period of two to eleven years preceded the occurrence of this process. Between the two events was a period of six weeks to six years. This sterile period represents the time in which inflammatory changes in the mucosa may occur, either gonorrheal, puerperal, or tubercular. These changes naturally involve the uterine end of the tube more than the abdominal, and in the subsequent course of events, when healing does result, the uterine end improves slowly. What are, then, the pathological changes in the tubal mucosa which stand in an etiological relation to ectopic gestation?

In a series of eight closely examined cases Prochownik found a gonorrheal history three times; in one of these cases there was an acute gonorrheal affection of the pregnant tube. Moskowicz found that of two cases tuberculosis was the etiological factor in one, and that in the other gonococci and staphylococci were present in the pyosalpinx of the non-pregnant tube. Median to the ovum Veit found microscopical changes which represent the results of pus inflammation. In two cases Dührssen found cilia abdominal to the ovum, but none toward the uterine end. Küstner observed very frequently a hemorrhagic tendency in the non-affected tube, showing that tube at least to have been abnormal. I found in three cases distinct changes from the normal in the mucosa median to the ovum.

Franz makes inflammatory changes in the tubes responsible for the occurrence of ectopic gestation. This is the more probable since inflammatory processes are so frequently found in the other tube. Franz found such changes in 80 per cent. of these cases in which a sterile period of two to seventeen years was noted. In cases where a sterile period of less than two years was observed tubal changes of the other side were present in only 53 per cent. He comes to the conclusion that we must seek the etiology in those affections of the tubes which have run their course, and which, having for a long time prevented the moving of the ovum have permitted a gradual and partial restoration to normal conditions.

While in a certain number of cases no pathological microscopic changes are found in the tubal mucosa, it may be explained by the fact that so-called catarrhal conditions frequently show little microscopical change. Even during or after gonorrhea the tube may seem microscopically fairly normal. Ahlfeld, in an experience of many years at the University of Marburg, met with so few cases of tubal gestation that he considers the relative freedom of his patients from gonorrhea, as compared with those in the larger cities, to be the only explanation.

Various inflammatory influences are etiological factors in that they destroy the cilia in whole or in part or diminish their functional activity. Besides, from the experiments made on animals we know that absence or early atrophy of the ovaries influences the muscular development and the functional activity of the uterine wall, the structure of the mucous membrane and the activity of

the cilia. In cases of malsecretion or of functional interference with the secretion of the ovary, or in the atrophy subsequent to labor, or as the result of lactation, or of constitutional disturbances, or of failures of development, the activity of the cilia is diminished.

Naturally, there must be activity to a certain extent on the part of the cilia, especially at the abdominal end of the tube, for extra-uterine gestation occurs most frequently in the isthmus tubæ. Prochownik found an ampullar location in only three cases out of 45. Mandl and Schmit found among 69 cases an ampullar situation in only 15. Dührssen found an isthmical location in all of his 29 patients. In the nine cases which I have examined closely the same is true. Although Mercier has collected 30 cases of interstitial gestation (with rupture), Leopold 10 cases of ovarian gestation (?), and although the growth of an ovum on the fimbriæ, as well as tubo-ovarian pregnancies, occurs, yet the vast majority are found near the uterine end of the tube.

A further proof may be found in the fact that recurrences of tubal gestation take place but rarely in the same tube. Patellani, in a tabulation of 36 cases found that first one tube and then the other was the seat of ectopic development. Veit, among 52 reported cases, found that it recurred only three times on the same side. An additional point of importance is the occurrence of tubal gestation in either tube at the same time, of which Gebhardt mentions nine cases. Further, Patellani has collected 37 instances of combined uterine and extra-uterine gestation—a practical proof of an affection of one tube, and certainly excluding external migration.

I believe that in the so-called sterile period gonorrheal, puerperal, tuberculous and atrophic changes take place. The interval of years between the last labor and the ectopic gestation, the fact that the location is generally in the middle area of the tube, the fact that repeated gestations are observed and rarely in the same tube, the occurrence of an ectopic gestation on both sides at the same time, and the frequency of external migration, together with the combination of extra and intra-uterine gestation, point certainly to an affection of one tube and probably, but to a lesser degree, of the other tube. The frequency with which, according to Küstner, a hemorrhagic tendency of the non-pregnant side occurs, as well as the microscopic discovery of catarrhal conditions, together with the history and the microscopical evidences of the presence of gonococci, point distinctly to a tubal affection. The observation of Dührssen, who found cilia abdominal to the placental site and none median to it, and Veit's observation of the presence of inflammation median to the ovum, as well as the theory of congenital and acquired atrophy of the tube, especially subsequent to labor, lead us at the present day to seek in the microscopical changes of the tubal mucosa, *i.e., injury to the cilia,* the etiological factor in tubal gestation.

127 East Sixty-first Street.

APPARENT FETAL SUBSTITUTION; MEDICO-LEGAL NOTE.*

BY ALLEN J. SMITH, M.D.,
OF GALVESTON, TEXAS.

IN the fall of 1899, at the opening of the University of Texas, one of the members of the entering medical class brought to the writer a specimen supposed to be a human monstrosity as a contribution to the pathological collection of the school from his preceptor, a physician living in an interior village of the State. Accompanying the specimen (now No. 283 of the Pathological Collection) the student presented the following certificate, signed by his preceptor:

"To all whom it may concern:

"This is to certify that the fetus in Mr. ————'s [student presenting the specimen. A. J. S.] possession was delivered by a negro woman in confinement at full term, according to her statement, and that I attended her in confinement. "————, M.D."

"————, Texas, Sept. 29, 1899."

For a number of reasons the writer prefers to leave blank the names of the signer and the student bringing the specimen, as well as the address of the donor, especially because the writer, having several times called the attention of the gentleman to the real character of the case, prefers to leave the disposition of the matter to his judgment without the influences which publicity might cause.

The supposed monster was contained in an ordinary jar, wrapped in paper when presented, and was not examined until some time later when, to the writer's surprise, the specimen proved to be the skinned body of a kitten, measuring 19½ centimeters from the end of the hind legs to the tip of the nose, and weighing 140 grams. The body had been skinned with little care, and here and there were found adherent to the exposed subcutaneous tissue and fascia a number of hairs, white and black, evidently from a furred animal. In removal of the skin the tail had been cut off, the lower end of the rectum severed and the latter protruded from the perineum for about a centimeter; the ear cartilages were cut away; the tip of the nose had been roughly removed; the lower jaw had been separated at the symphysis and the median portion of the right side cut off. Two teeth remained visible, one well protruding canine of the right lower jaw and a deciduous molar, probably the first, in the right upper jaw. From both upper and lower jaws in front the incisors had been pulled or broken, the sockets showing their former position. Some mangling of the alveolar ridge in other remaining portions of the jaws prevents the determination of the teeth or sockets in these parts. The foot pads had been removed, and most of the claws cut or pulled away; but on each front foot a single retractile claw in its sheath remained, and on all the feet except the left hind one, one or more of

*From the Pathological Laboratory of the University of Texas 1902, No. 4.

the sheathed phalanges remained. The general appearance of the specimen, the hairs, and the type of teeth and claws clearly indicated its feline character. The size of the animal, the fact that the eyelids of the left eye, which had not been cut away, although on the opposite side the eye had been left quite bare of lids, were entirely separated, the appearance of a distinct umbilical scar, and the presence of food remnants (especially some vegetable matter) clearly recognizable by the microscope in the material pressed out of the severed rectum, showed that it had lived probably a number of weeks. The interior of the body and the contained viscera were not examined, as the writer preferred to keep the specimen intact for obvious reasons, inasmuch as the external parts clearly indicated its nature.

Fig. 1.—Skinned kitten. A, alveolar process from which incisors have been removed; C, retractile claws; C.S., phalanges with claw sheaths more or less entire, claws missing; F, fat of subcutaneous tissue; L, tongue; R, rectum; S, salivary glands with attached fat tissue; T, tooth.

As related by the student bringing the specimen to the school, his preceptor having been called to attend the negro woman in confinement repaired to her home for the purpose, but upon his arrival was informed that labor was complete, that the offspring, which was said to have been born at term, was a monstrosity and was dead. In the bed where the woman lay, in the midst of blood and what seemed to be the fetal adnexæ he found the specimen, apparently separated from the cord by the attendant. After attending to the cleansing and dressing of the woman the physician left, carrying with him the supposed monster, later sending it as above narrated to Galveston. The writer has addressed several letters to him, asking for further details of the incident and calling attention to the legal aspect of the case; but has received no reply. He has been assured by the student that the specimen was sent in good faith and that its nature was not appreciated until the examination here, but the latter has been unable to add further particulars.

The question therefore at present rests—with little probability of near solution, the writer fears—in these lines: Was a child born for whose body or living person the body of the kitten was substituted? If a case of substitution, what motive for the substitution existed and what disposition was made of the child? Or was the whole affair a hoax, the result of a hysterical pretense or of a practical joke? A somewhat similar case in which the body of a puppy was substituted for that of a newly born infant was recently related to the writer as having been perpetrated in connection with Voodooism among some ignorant negroes. The possibility of crime in such a case is of course its most serious feature; and the writer does not wish to evade that measure of responsibility which the acquirement of the above knowledge imposes upon him as a citizen. Without knowledge, however, of the identity of the persons concerned, it is impossible to proceed without professional and perhaps personal offense to those more closely connected with the original incident; and even though considerable time has elapsed, the writer is unwilling to believe that with the above information in his hands the attending physician will not, when he has satisfied himself of the real nature of the act, take such provisions as will preserve the majesty of the law.

THE ELECTIVE SYSTEM IN MEDICAL SCHOOLS.

BY DANIEL N. EISENDRATH, A.B., M.D.,
OF CHICAGO, ILL.;
PROFESSOR OF CLINICAL ANATOMY, COLLEGE OF PHYSICIANS AND SURGEONS; PROFESSOR OF SURGERY, POST-GRADUATE MEDICAL SCHOOL, ETC.

THE curriculum of the modern and progressive medical school has become a very complex structure. Not many years ago a few months of service in a preceptor's office followed by two terms at a medical college, rarely exceeding five months each in duration, were all that was required of the student before receiving his degree. Obstetrics, clinical medicine, and surgery were taught him in the same semester with the so-called fundamental branches, such as anatomy, chemistry and physiology.

The introduction of the graded system and the lengthening of the school term to three years of six months each, had scarcely been made when the rapid development of all departments of medicine necessitated further extension. At the present time every college in good standing in this country requires four terms or years of nine months each.

In the past few years many changes have taken place in the curriculum. The tendency had been to arrange the courses in such a manner that the student began his practical work in his third or junior year. The first two years were devoted to the laboratory subjects, anatomy, physiology, chemistry, pharmacology and pathology. In many of the schools, especially in this college, there has been a feeling that the last two years were so crowded with clinical work that it would be well to begin some of it in the earlier years. This movement has been extremely successful and our clinics to the freshman and sophomore classes are but the foretaste of a more extensive introduction of instruction in clinical methods and direct contact with clinical material in these years.

The higher a college can make its preliminary requirements, the better prepared in the branches ordinarily taught in the first two years will its students be when they enter. Hence, more practical work can be given them earlier in their medical course than hitherto.

In the same manner in which medical schools were compelled to devote more and more time to the laboratory branches, so the rapidly increasing demands which modern practice makes of the physician have necessitated a change in the more practical years. Even an introduction of some of the clinical work into the first two years will not suffice. We must either add another year to the curriculum or give the student more latitude in the selection of his work in the last two years.

When classes in a medical school averaged 50 students, a small amphitheater, in which nearly every one was close to the clinician sufficed. In our larger classes, varying in number from 150 to 250, a different problem presents itself.

In order to equip himself to meet the keen competition of practice, it is necessary for the student to come in close personal relation with the teacher and patient. The time has passed when large amphitheater clinics are profitable to the student. Clinical conferences at the bedside, and in the clinic room where a small number of students can by direct examination of the patient and by the use of every modern diagnostic means receive inspiration from an enthusiastic teacher, must become the method of teaching in the future. Didactic lectures and recitations for small classes (not exceeding 50) will still be of great service.

How can the ambitious student get the best results from his last two years? By permitting him to select to a great extent the work which he wishes to do. He should not be compelled to sit in crowded clinic and lecture rooms for nine or ten hours daily, jumping from a lecture on surgery to one on dermatology and again to one on medicine, to be followed by a view, at a distance of 100 feet, of a case of tabes.

By giving him the privilege of selecting to a certain extent his teachers and subjects, there will be a reciprocal benefit. If a student is required to take a minimum amount of work so as to conform to the State laws, he can so arrange his time that under proper supervision he will choose those courses which tend to develop his mind symmetrically. There will be no overcrowding and resultant confusion of ideas through being compelled, as at present, to attend every lecture or clinic no matter by whom it is given.

He can select his work at the beginning of each term so that there is a certain sequence or relation of the subjects taken up. With the present multiplicity of branches taught in a modern medical school and the increase in number of teachers each of whom demands some fraction of the student's time, it is absolutely necessary to call a halt. If we do not permit the introduction of the elective system we will graduate automatons and not thinking physicians, men and women who can describe locomotor ataxia, a greenstick fracture or an enlarged spleen perfectly, but who have never educated their fingers or eyes sufficiently to recognize one in practice.

What is the reciprocal benefit, that is, to the teacher? The elective system is the best stimulus for a medical instructor, be he a professor or mere associate, which ever existed. The writer has been informed that its introduction at some schools has been followed by a marvelous waking-up of those who, through being accustomed for many years to have a compulsory attendance, began to grow negligent in their teaching methods and to lose interest in their clinical work. A short season of small voluntary attendance caused some reflection. The result was that it stimulated to better and more painstaking work with very happy results. Students are severe critics and can form an estimate of the ability of a teacher rapidly. Give them their choice and the better instructor will have a large enrollment, the poor one none.

Another benefit to be derived from the elective system is that it gives a college a better opportunity to utilize clinical facilities outside of its own walls. If the student feels that he can get credit for work done in extramural clinics just the same as if done in the college building, he will take advantage of many clinical facilities which are at the present time mere figureheads for advertising purposes with many colleges. In most of these extramural institutions there is an almost inconceivable wealth of clinical material wasted and good teachers undiscovered for lack of opportunity.

The elective system is no longer an experiment. Its success has been proven and its general adoption is a step in the lines of progress.

In the crowded condition of the present medical curriculum and the necessity of graduating thinking, practical young men and women, the elective system must ultimately be adopted by every college. It will best dispose of the problem of large classes and of more direct contact between student, teacher and patient.

THE SYMPTOMATOLOGY OF TABES: AN ANALYSIS OF 140 CASES OF LOCOMOTOR ATAXIA.

BY JOSEPH COLLINS, M.D.,

OF NEW YORK;

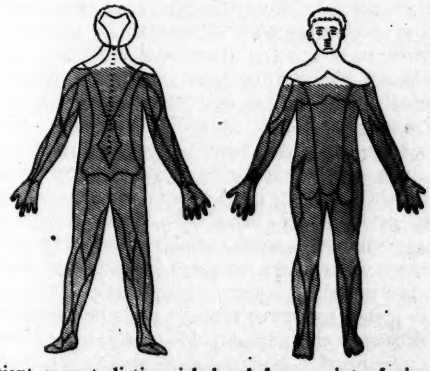
PROFESSOR OF NERVOUS AND MENTAL DISEASES IN THE POST-GRADUATE MEDICAL SCHOOL; VISITING PHYSICIAN TO THE CITY HOSPITAL; CONSULTING NEUROLOGIST TO THE HOSPITAL FOR RUPTURED AND CRIPPLED, ETC.

(Continued from Page 459.)

Diagrams to illustrate disturbance of tactile sensibility in a few cases are reproduced here:

Analgesia.—Analgesia was noted in 58 per cent. of the cases. In its distribution it was not unlike anesthesia except that it was seen relatively oftener in the arms; lower extremities, 41; upper extremities, 30; trunk alone, 5; face and head, 6. Analgesia in the domains of the ulnar and peroneal nerves is common in tabes. In my experience it is found oftener in these two localities than anywhere else. Ulnar analgesia was noted 34 times and peroneal analgesia 43 times. In many of these cases is was present in both areas. A zone of analgesia over the upper part of the chest is rather common in tabes. I found it in

Fig. 4.



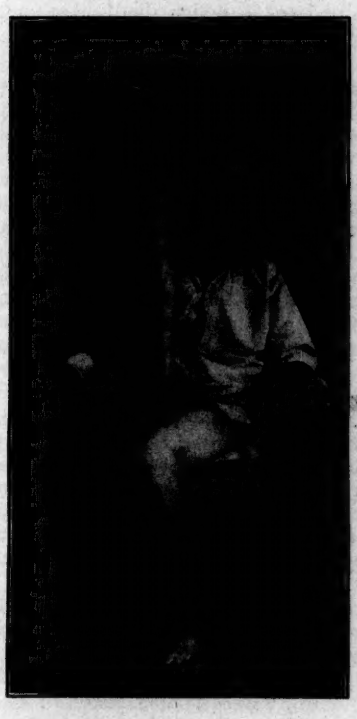
Patient cannot distinguish head from point of pin over shaded areas. Cannot feel cotton wool brush.

53 cases, 38 per cent. Exaltation of the pain-sensibility, especially at the borders of the analgesic zone, was found astonishingly often. Analgesia of the face and head was noted in a small proportion of the cases, viz. 6.

Biernacki's sign, absence of pain and tingling in the distribution of the ulnar nerve, when the trunk of the nerve is pinched and compressed as it crosses the olecranon fossa, was noted in 18 out of the 42 (43 per cent.) last cases in which it was investigated. More or less insensitiveness of the testicle was noted in 21 instances. I have no records to show how often the sensitiveness of the testicle to pressure was tested. I refrain from giving any percentage for this symptom. I am inclined to believe, however, that it is found in some degree in at least one-third the cases. Sensitiveness of the female breast varies very much with the individual and with the age of the patient. I have found some degree of sensitiveness in five cases, 31 per cent. (Two additional female tabics have been seen since the publication of Part I of this article.)

Pitres has called attention to the fact that profound epigastric analgesia is a symptom of fre-

Fig. 5.



To illustrate hypotonia in a tabetic.

quent occurrence in tabes, having found it in about 50 per cent. of his cases. Although I have not given this point especial attention, save during the past year, my experience so far has not been corroborative of this statement.

Disturbance of thermal sensibility was noted a number of times, especially in patients seen in private practice. Some degree of increased sensibility to cold existed in 20 of the 54 patients, 37 per cent. In many of these contact of cold water on one or another part of the body was painful. It has not been noted that there was thermo-anesthesia or analgesia for heat in any of my cases.

The Deep Sensilibity (muscular and articular sense).—The deep sensibility was unfortunately

not investigated in all of the cases. In the cases in which the observations were made the ordinary tests were used: Weighting objects in the hand, estimating the position of the extremities, and interpreting passive movements with closed eyes. The deep sensibility of the lower extremities was impaired in 35 cases, the upper in 11, the lower and upper in 13. In the 73 cases in which I can be sure the muscular sense was tested impairment of it was noted in 63 per cent. of the cases.

Hypotonia.—Careful examination into the tonus of the muscles was made only in the 57 recent cases. In those some degree of hypotonus was found in 41 instances, 72 per cent. As a rule it was found in a much more advanced degree in patients in which the disease had existed for a protracted time. In some cases it was comparatively slight, *i.e.*, the leg extended on the thigh could only be brought to a little less than a right angle with the body, the patient lying flat on the back. In other instances it could be approximated to the shoulder. A fairly illustrative degree of hypotonia of the lower extremities is depicted in Fig. 5.

Motor Phenomena of Tabes.—Although the motor symptoms are the ones from which the disease takes its common name they are rarely the conspicuous symptoms in the early stages of the disease. As a matter of fact the disease may exist for many years without causing noticeable motor impairment. Ataxia develops sooner or later if the patient lives long enough in every instance. The fact that ataxia is absent in not a few cases makes it difficult for patients to comprehend that they have locomotor ataxia. This inability to grasp the situation is by no means confined to the layman. For instance, a physician in whom the diagnosis of tabes was made in 1895, writing to me seven years later, says: "Insomnia and lightning pains are the leading symptoms still; there is no ataxia yet, and therefore locomotor ataxia is an improper designation for my case." Literally speaking, what he says is true, but locomotor ataxia used to designate a disease does not signify that ataxia of locomotion is necessarily an accompaniment of this disease any more than the man whose name is Joseph has a coat of many colors.

Ataxia of Gait.—Ataxia of gait was present in 102 cases, 73 per cent. In 23 cases the ataxia of gait was not present when the patient was first examined. It developed, however, in the majority of them while they were under observation, or it was present when they were encountered later in hospitals or at my clinic. If these cases were not included the proportion would be reduced to 56.5 per cent.

In the majority of cases ataxia of gait was first brought to the patient's notice when crossing crowded thoroughfares, walking in a narrow space or going downstairs. The latter (signe d'escalier of the French writers) was noted specifically in 63 cases. Ataxia of gait was extremely slow to develop in a few cases. In one patient it was so remarkable that it deserves to be quoted. (See history of case to illustrate *slow* tabes on page 493.)

Romberg symptom was noted in 117 cases, 85 per cent. In 14 of these it developed while the patient was under observation. v. Sarbo found Romberg symptom in 93 per cent. of his cases, and he remarks that this is a greater percentage than that of most writers. The explanation is that others do not classify as "Romberg symptom" the slight, swaying, that he does.

Ataxia of the upper extremities was noted in 48 cases, *i. e.*, about 34 per cent. In some cases it was very slight and in a very considerable number of cases it developed while the patient was under observation. This finding is in marked contrast with the findings of many other recent statisticians of this subject. Bramwell observed it in 25 per cent., Thomas in 12 per cent., Bonar in 8 per cent, Riley in 24.5 per cent., Leimbach in 4 per cent. only.

The explanation of the relatively great frequency with which I found it must, I think, be sought in the fact that many of my patients have been under more or less continual observation for a number of years. For instance, the majority of the very considerable number of tabic patients now in the Alms House Hospital of this city were for a number of years under my eye in the Hospital for Nervous Diseases to which I was visiting physician.

The accession of ataxia was sudden in 10 per cent. of all the cases. Patients may have had symptoms such as pain, paresthesia, vesical and sexual weakness, etc., for a variable time, but no ataxia, and then have the ataxia set in abruptly. This is extremely well illustrated by the following case, in which the ataxia not only came on in the lower extremities (its customary place of manifestation), but in the upper extremities and face as well. M. R., a cook thirty-seven years old, denies syphilis. Seen October 3, 1899. For ten years he has had pains and feeling of tension of the skin and for five years burning, shooting pains in legs and arms. In 1897 he suddenly became unable to walk, unable to use the hands to button his clothes, to carry food to the mouth, etc., and unable to articulate distinctly. This condition lasted for three months and then gradually he recovered the capacity to coördinate purposeful movements. Examination shows the typical objective features of the disease, pupillary and sensory manifestations, ataxia, hypotonia absent, knee-jerks and vesical weakness.

I have observed a condition comparatively similar to this in quite a number of cases, and as a result I venture to say that in every case in which ataxia develops more or less suddenly and becomes of very great severity early in the course of the disease that this ataxia will improve without or with treatment in almost every instance, so that the patient will again be able to get about with much satisfaction. This can be no better illustrated than by the following case, which seems to have developed with remarkable sud-

denness. C. S., fifty-five years old, a pole climber, denies syphilitic infection. Seen for the first time on February 18, 1901. He says that on October The gate is very ataxic and he cannot walk with- that his legs were heavy and unwieldy and the seat of a sensation as if they were asleep. The previous day had been inclement and he was at his work. When he got up and walked about his gait was uncertain, and he says he staggered as if he had been drinking. He noticed also a sensation as if an iron band had been fastened about the waist. Two weeks later he was unable to walk, he says, because of weakness of the legs, but from his description I infer that it was very profound incoördination. At this time incontinence of urine developed and he complained of lightning-like pains, of diplopia, of giving way of the knees whenever he tried to put his feet under him. Since that time he has learned to walk with the aid of sticks and crutches, but his symptoms remain about the same. Examination shows profound hypotonia, of the lower extremities especially. When he stands the knees are bowed backward. Both feet can be put on the back of the neck with the knees extended. He says that he has lately become a "rubber man." The gait is very ataxiac and he cannot walk without being steadied. The knee- and ankle-jerks are absent. The plantar and abdominal reflex present; the cremaster is absent. The pupils are equal, not responsive to light, but respond promptly in accommodation. There is well marked anesthesia over both external popliteal nerves and over the feet about the knees, and tactile sensibility is very much delayed. Above the knees sensibility is fairly normal.

While in the hospital this patient developed pulmonary tuberculosis.

Sudden and Slow Onset of Tabes Contrasted.—The following case is quoted as an example of the sudden onset of tabes and to illustrate the manner in which some patients describe the beginning of their disease: A. G., a barber, forty-nine years old; infected with syphilis when nineteen. He says that he has had three "paralytic strokes." The first one five years ago that "lamed" the bladder; the second attack three years ago that "lamed" the left eye. The last attack "lamed" the right leg and right arm. This came on "over night" about six months ago. This story being interpreted means that when he was forty-four years old (*i.e.*, twenty-five years after the syphilitic infection) he began to complain of inability to pass water and soon this was of such severity that it was necessary to resort to the catheter. Since that time there has been incontinence of urine with occasional retention. Since this time he has been wholly impotent. Two years later diplopia developed, and soon afterward the ptosis of the left eyelid. This lasted for about eight weeks and then disappeared gradually. Occasionally he has seen double since then, but not often. The next symptom to develop was giving way of the knees. He had fallen a number of times without attributable cause. He then first noticed some difficulty in going down stairs and on walking in the dark, but no attention was paid to the ataxic symptoms until they became so profound in the arms and in the legs that he was unable to work. Although he maintains that it was greater in the right side than in the left, it was not in reality, it merely appeared so to him, as he could not use the razor or scissors with the right hand. It is not necessary to enumerate the physical signs. The objective signs in this case were absolutely typical, and in addition there was well marked optic atrophy of the left eye. At the present time the patient is bedridden. Ataxia and hypotonia are most profound.

As an example of tabes which seemed to have come on suddenly, but which in reality had existed for a considerable time, making itself evident only in symptoms that could be revealed objectively, the following case may be cited: A rabbi, thirty-five years old, denies syphilitic infection and dates the beginning of his illness back about one month. The order in which the symptoms developed was as follows: (1) Weariness of the legs; (2) unsteadiness of gait; (3) dimness of vision; (4) difficulty in mounting and dismounting stairs; (5) giving way of the knees; (6) slight unsteadiness of gait and station, particularly when he had been observed when standing on the platform, such as walking to and fro, and standing upon a platform; (7) no symptoms referable to the urogenital sphere, and no pain. He says that some months ago he noticed that the left ocular aperture was smaller than the right, although at times he has had some diplopia. Examination reveals irregular, unequal pupils, the left larger than the right, both displaying typical Argyll-Robertson phenomena; vision $^{20}/_{20}$; there is slight hyperoptic astigmatism; paresis of both external recti, the left more profound than the right. The ocular fields and the fundi are normal. The knee-jerks and ankle-jerks are absent. The plantar, cremaster and abdominal reflexes are normal. There is well marked ataxia of station and of gait; there is no ataxia of the upper extremities. There are no sensory disturbances; hypotonia is fairly well marked. There are no trophic or vasomotor phenomena. The pulse is 94, and the heart sounds are free from murmurs.

In sharp contrast to these the following case of *slow tabes* may be cited: M. N., fifty-nine years old; syphilitic infection in 1868; five years afterward he first began to complain of shooting pains in the legs. At this time he was under the care of the late Dr. E. C. Seguin, who made the diagnosis of tabes. The symptoms that he recalls to have been present at that time in addition to the pains, were diplopia and rotation outward of the left eye and girdle sensation. We have no information as to what the physical signs at that time were. He first came to the Clinic at the Post-Graduate Hospital about 13 years ago. The notes of the examination were made in 1899, *i.e.*, about 25 years after the disease had first

been diagnosticated. His complaint at that time was of profound unsteadiness of gait which had developed one month before, of difficulty in retaining the urine, and of progressively failing eyesight. Examination showed ataxia of station, gait and the upper and lower extremities; absent tendon-jerks; widely dilated pupils without response to light, profound hypotonia; and extensive areas of anesthesia and analgesia of the trunk and of the extremities. There is no optic atrophy present.

In contrast with these cases, in which the ataxia develops (1) rapidly, (2) slowly, we occasionally encounter cases in which the ataxia has been profound for a more or less protracted time, then gradually grows less and practically disappears; but the objective accompaniments of tabes remain.

As an example of such a case the following history may be cited: Mrs. X., thirty years old, an actress, began to complain of numbness of the legs, especially when lying, and a sensation as if the clothes were all too tight and heavy when about twenty-six years old. About a year later she first complained of unsteadiness when walking across the stage. When she came near the footlights she was afraid of falling over, and when walking along a curb in the street she would have similar fear. About this time she began to complain of pain, sharp shooting pain, as if a knife or several long pins had been thrust into the thighs and legs. Before this she had had some difficulty in retaining the urine, but since then the trouble has been to start the stream, at times it seemed to be quite impossible. During the last year she has lost sexual desire, and cohabitation is never attended with orgasm. Occasionally the head is the seat of a queer numb sensation which she cannot well describe. Her principal complaint at the time when I first saw her in December, 1897, was of numbness in the lower extremities, inability to control them, especially the right extremity, when standing and walking, inability to walk unaided, except at home where she has a clear space, of retention and incontinence of urine and of occasional attacks of severe pain. Examination shows extreme ataxia of station and gait, loss of the tendon-jerks at the knee, ankle and elbow; marked hypotonia; normal response of the plantar and epigastric reflexes; analgesia of the entire surface of the lower extremities and trunk extending up as far as the third rib, and diminished tactile sensibility over the same area, but the hypesthesia is very trifling compared with the analgesia. The pupils react to light promptly and in accommodation.

The patient recovered so completely from the ataxia that she was able to resume her work on the stage, which necessitated dancing. She has been practically free from ataxia for four years. Examination reveals unequivocal signs of tabes.

The Tendon-jerks in Tabes.—The condition of the tendon-jerks in this series was as follows:

(1) KNEE-JERKS.

	Cases.	or Per Cent. of 140 Cases.
Absent	118	84.3
Normal	6	4.3
Sluggish, *i.e.*, elicited only on reinforcement	8	5.7
Present on one side, sluggish or absent on the other	8	5.7

Among the 118 cases in which the knee-jerk is stated to be absent, in ten the knee-jerk disappeared while the patient was under observation, *i.e.*, when the history was taken both knee-jerks were present, or one was present and the other absent. If to these 118 cases the 14 cases, in which the knee-jerk was sluggish are added, and very properly they should be, for it is only a question of time when they will completely disappear, the percentage of cases in which the knee-jerk is lost in tabes would be 94.4 per cent. If, on the other hand, these and the ten cases of tabes in which the jerks disappeared while under observation are subtracted from the entire number, the percentage will be reduced to 77 per cent., and these figures may be taken as representing the average condition of the knee-jerks in all of the cases of tabes, *i.e.*, cases of initial tabes at the end of the preataxic stage, and the cases of well-marked tabes. Of the eight cases in which the knee-jerks were present, in two the jerk was exaggerated. There is no question, I believe, of the correctness of the diagnosis, but it may be said that in both cases it was corroborated by another neurologist. One of the patients was at the very onset of the disease, his initial symptoms having been nocturnal incontinence of urine, occasional rheumatic pains, diplopia, and later unilateral third nerve paralysis which disappeared after a few weeks. The second case may be put in the category of those cases that I described as the neuralgic type.

(2) ACHILLES-JERKS. (EXAMINED IN 121 INSTANCES.)

	Cases.	or Per Cent. of 140 Cases.
Absent	107	88
Sluggish, *i.e.*, elicited only on reinforcement	7	5.8
Present on one side only	3	2.4
Normal	4	3.3

Thus it will be seen that the absence of the Achilles-jerk was noted in a greater percentage of cases than the knee-jerk.

In one case of undoubted tabes the Achilles-jerks were absent, the knee-jerks present; in two cases the knee-jerks were elicitable but sluggish on the left side, absent on the right. A similar statement applies to the Achilles-jerk. In one case both Achilles-jerks were absent, the knee-jerk sluggish on one side and absent on the other. v. Sarbo found the Achilles-jerk present eight times out of 92 cases, *i.e.*, absent in 91 per cent. of the cases, which figures correspond closely with mine.

(3) ELBOW-JERK.

	Cases.	or Per Cent. of 140 Cases.
Absent	19	13.5
Present	23	16.4
Exaggerated	2	1.5
Not noted	96	6.8

The elbow-jerk was absent in 43 per cent. of the cases, in which it is recorded that the test was made.

One of the cases in which the elbow-jerk was exaggerated was the first one mentioned above.

Cutaneous reflexes:

(1) PLANTAR REFLEX.

	Cases.	or Per Cent. of 140 Cases.
Exaggerated, lively	27	20
Absent	12	8
Present on one side only	1	
Diminished	6	4
Slow response	3	4
Normal jerk	32	23
Not noted	59	

The plantar reflex was normal or above normal in 59 out of 71 cases, in which it is recorded that the test was made, or 83 per cent.

(2) CREMASTER.

	Cases.	or Per Cent. of 140 Cases.
Absent	8	6
Sluggish	4	3
Absent on one side, present on the other	2	1.5
Exaggerated, lively	11	8
Normal	32	23
Not noted	83	

The cremasteric-jerk was therefore lively or normal in 43 cases out of 53, *i.e.*, 81 per cent.

(3) ABDOMINAL.

	Cases.	or Per Cent. of 140 Cases.
Absent	9	7
Upper lively, lower absent	3	1.5
Sluggish	5	3
Exaggerated	12	8
Normal	34	24
Not noted	77	

Normal or lively in 34 cases out of 58, *i.e.*, 60 per cent.; exaggerated in 20 per cent.

In two instances the behavior of the plantar reflexes was such as to make it worthy of note. In the first case a woman, thirty-two years old, claims that her disease originated from getting thrown to the floor of a trolley car in collision. She has the most classical picture of tabes. None of the pathognomonic subjective or objective symptoms is lacking. The plantar reflex is elicitable, but it shows a remarkable variation from normal. After striking or scratching the sole of the foot, from five to eight seconds elapse, then the foot, leg and thigh are thrown into a clonic state. After a variable number of clonic twitchings, from three to six, the leg extends and then relaxes and the foot assumes its normal position. This condition is to be elicited on either foot, but on the right (the one in which the ataxia is most marked) more than the left. A heavy scratch along the sole produces a more vigorous clonic state of the lower extremity than a light one, but always five seconds or more elapse before the movement occurs. Bramwell in a recent article in *Brain* (Spring, 1902), records a similar example. In a second instance, a cleric, later an actor, who had an extragenital syphilitic infection and who developed typical manifestations of tabes, including perforating ulcer and arthropathy manifested a condition somewhat similar to that in the case described above except that the clonic spasm was not so violent. In this instance an interval from two to four seconds elapsed between the scratch on the sole of the foot and the remaining reflex. It may be a mere coincidence, though I am inclined to think not, that both of these patients had been injured in trolley car accidents, and both had suits for damages against the company. In a number of other cases the reflexes were exaggerated, but in none comparable to the above two.

Big-Toe Phenomenon.—It was noted in the histories in forty-one instances that the test had been made for the big-toe reflex (Babinski phenomena), but in no case was it found.

The Pupillary Phenomena of Tabes.—The pupils were unequal in 32 cases, *i.e.*, in about 23 per cent. of all the cases. Inequality of the pupils was probably not noted in cases in which it was very slight. Excluding such instances the frequency of inequality of the pupils would seem to be 25 per cent. Irregularity of the pupil was noted eight times, *i.e.*, 6 per cent. I none of these cases it was not at all easy to decide whether the disease was tabes or cerebrospinal syphilis. The size of the pupil was noted in 94 instances. Of these 36 were classed as pin-point, 27 as small, 6 as dilated, and 25 as medium or normal-sized. In 63 cases, *i.e.*, in 45 per cent., the pupils were small and the majority of these were extremely myotic. Mydriasis was a very uncommon finding (5 per cent.), and when found it was nearly always associated with irregularity of the pupils. In 101 of the 140 patients, the pupils did not contract on exposure to light. That is, there was loss of the light-reflex in 72 per cent. of the cases. In 15 additional patients the pupils were sluggish in one or both eyes and were evidently on the way to complete loss of the pupil-reflex to light. If these cases are added to the 101 mentioned above, and properly they should be, the percentage of cases in which the pupillary light-reflex was lost is about 80. In seven of the cases in which the records show that the light-reflex of the pupil was present when the patient was first examined, the typical Argyll-Robertson phenomena developed while the patient was under observation or before he was encountered in another hospital. It is very uncommon for the pupils to lose their capacity to contract in ac-

commodation in tabes, but occasionally it is lost. In my cases it was noted that the pupils did not contract in accommodation in nine instances.

The characteristic pupillary phenomena of tabes is loss of contractility of the pupil on exposure to light, associated with preservation of the pupil-contractility in accommodation and is universally known as the Argyll-Robertson pupil. Its value as one of the most important and reliable diagnostic signs of tabes is universally recognized. In 97 of my cases it existed in typical form when the patients were first examined, in four cases it existed, but in not typical form, *i.e.*, loss of or sluggish light-reflex in one or both eyes and in six it developed while the patient was under observation. In other words, it was a sign of the disease in 77 per cent. of all the cases. The frequency of the Argyll-Robertson pupil in the experience of some recent writers, is as follows: Bramwell, 72 per cent.; Leimbach, 84 per cent.; Bonar, 71 per cent., and Thomas, 63 per cent.

Ocular Palsies.—Diplopia was noted as having occurred 32 times, 22 per cent. In the majority of these instances it was comparatively an early symptom and intermittent in its manifestation. In some instances it was said to have been worse in the morning, worse after attacks of indigestion, and after smoking, but it is probable that these had little relationship to it.

Paralysis of one or more of the extrinsic eye muscles is at times an early symptom of tabes. There was a history or evidences of paralysis of one or more of the eye muscles in 14 cases, 10 per cent. The third nerve was affected in seven instances, the third and sixth in two, the sixth in four, and the fourth and sixth in one. Some degree of ptosis was noted in seven other cases. In five of these it was unilateral, in two bilateral. Complex paralysis of the eye muscles occurred in two cases and one of these is quoted briefly above. Nystagmus like movements of the eyes in forced positions, such as looking to the right and to the left was noticed in 21 cases, *i.e.*, 15 per cent. It is worthy of comment in view of the fact that ocular palsies are stated in the text-books and in many monographs on tabes to be comparatively a frequent accompaniment of tabes, to emphasize here the fact that they occurred in only 15 per cent. of the cases, and unless very liberal interpretation is put upon the designation, ocular paralysis, *i.e.*, if the cases of mild ptosis are excluded, such palsies occurred only in 10 per cent. These figures agree very closely with Bramwell (*loc. cit.*) who found some form or other with ocular palsies in 16 per cent. of the 155 cases analyzed by him; and with those of v. Sarbo, 10.5 per cent.

As an example of a typical case with ocular palsies, the following history and photograph of a patient may be presented. J. M., thirty-two years old; syphilitic infection when seventeen years old, following first coitus. Duration of present symptoms two years. Initial symptom, difficulty in urination. Much voluntary force was necessary and in them the stream was very inadequate. Soon after this he noticed that everything that he looked at seemed to be at an angle, and he had to forego working at his trade. He was treated for astigmatism, but later when the ocular palsies became more evident he was put under large doses of iodide of potassium and improved somewhat. The following symptoms developed successively: A drawing, compressing sensation, "a miserable feeling" in the gums, around the throat and neck extending over the left shoulder and chest; sensation of numbness and loss of dexterity in the upper extremities, especially the fingers; failing sexual powers; short, sharp, shooting pains of brief duration; difficulty in locomotion which he attributes to the disturbance of eyesight and diplopia. Examination reveals ataxia of station, locomotion and of the upper extremities, all moderately well pronounced; the knee-jerks and Achilles-jerks are absent; there is a

Fig. 6.

Paralysis of the sixth pair of nerves in a case of tabes of sudden onset.

small area over the upper part of the chest and lower part of the neck in which tactile sensibility is blunted, but it does not amount to anesthesia. There is likewise an area of hypesthesia over the forehead. The voice is husky and vocalization is preceded by a prolonged audible inspiration. When this symptom first developed there was a whistling sound on inspiration, and he has had two or three attacks of a smothering sensation associated with great anxiety, in which most powerful efforts of inspiration are necessary. Examination with the laryngoscope shows a partial paralysis of the adductors of the vocal cords. Examination of the eyes shows practically normal vision with no impairment of accommodation or of the visual fields. The sensibility of the cornea and conjunctiva is reduced more in the right eye than the left. Motility of the eyes downward normal and reduced in every other direction. There are jerking, twitching movements of the eyeballs when they are put in extreme positions,

except when they are rolled downward. The left eye can be abducted only to the median line. Torsion movement from action of the oblique are not noticeable. Pupils: the right is horizontal and of medium size, the left round and of medium size. Reaction to light is present to a very slight degree; reaction in accommodation is prompt. The fundi are normal. In brief, there is affection of (1) both ophthalmic divisions of the fifth nerves; (2) paralysis of the left external rectus muscles; (3) paresis of the other extrinsic muscles of both eyeballs; (4) Argyll-Robertson pupils.

This patient gave a fictitious address at the clinic, and unfortunately I have never been able to get track of him.

Gilles de La Tourette has described what he calls the tabetic eye. In many cases of tabes there is an expression about the eyes which suggests the diagnosis, but it is difficult to depict it verbally in just what this change consists. The expression is most pronounced in those cases in which there is a slight degree of ptosis and some ataxia of the eyeballs, and in those cases in which there is sensori-motor disorder.

In some cases there is a moderate degree of exophthalmos, slight retraction of the lids to enlarge the palpebral fissure and diminution of the tension of the eyeball (ocular hypotonia of Berger), which gives a characteristic appearance.

Optic Atrophy.—Optic atrophy was found in 19 of the 140 cases, or 14 per cent. The percentage of optic atrophy varies very much in different statistics. Leimbach gives 7 per cent.; Bonar, 8 per cent.; Thomas, 10 per cent.; Riley, 11 per cent.; Bramwell, 22 per cent.; v. Sarbo, 30.4 per cent. The latter writer believes that within five years after the onset of the tabes, decoloration of the optic nerves occur in the majority of cases, and that it may therefore be looked upon as an early symptom of tabes. I am inclined to believe that my figures underestimate rather than overestimate the frequency of affection of the optic nerves, still I do not agree with the last named writer regarding the importance as an early symptom. In many of the 140 cases constituting this series, especially those seen in dispensary and hospital, the records of ophthalmoscopic examination were not convincing, or they are entirely absent. In four of the 19 cases the optic atrophy was slight; in six the patients were totally blind; in two they were partially blind and their infirmity was increasing rapidly. In three of the remaining number the atrophy was distinctly to be made out, still the patients did not make special complaint of eyesight. In the four remaining cases the optic atrophy was slight. In four cases optic atrophy was the initial symptom of the disease. Of all the cases with optic atrophy, only one was referred to me by an ophthalmologist. This would indicate that optic atrophy was not present early. This experience is sharply in contrast with that of Starr (*Philadelphia Medical Journal*, June 3, 1899), who says: "In 25 of the 30 optic atrophy cases blindness was present many years before any other symptom of tabes, except loss of the knee-jerk, developed." In no case was there any evidence of optic neuritis. In three of the 19 cases in which optic atrophy existed, there was no ataxia at the time when the optic atrophy was very distinct, but in two of these cases that were continually under observation, ataxia developed.

In no case did the superimposition of blindness seem to have any effect upon the course of the disease. In three of the cases pain, paresthesia and crises continued to occur after the blindness had become complete. In one case, attacks of pain were of much greater severity after blindness, and the ataxia was more distinct. In another case pain was not a symptom of the disease until after the development of the optic atrophy.

My experience is therefore at variance with that of Dejerine and others who report cases of tabes in which the development of optic atrophy was contemporaneous with amelioration of tabes, and who speak of "tabes arrested by optic atrophy."

Bladder Symptoms.—Symptoms referable to the bladder are amongst the most constant of the symptoms of tabes. However, in my series such symptoms were noted only 78 times, *i.e.*, about 55 per cent. This percentage, relatively small, compared with the statistics of others, is probably the result of the fact that a considerable number of my cases were seen in the early stages of the disease, and although vesical symptoms are among the initial symptoms in from 10 to 20 per cent. of the cases, they usually did not attract the attention of the patient until after their more insistent symptoms have developed.

The vesical symptoms were divided as follows: (1) Slowness in starting the stream, necessity for bearing down and lack of vigorous expulsive force, 22 cases; (2) retention, periodic or constant, 21 cases; (3) incontinence, 26 cases; (4) hurried action of the sphincters, nine cases. There were in addition a few cases in which some interference with micturition followed exposure to intense cold, but these are not included, as this may occur in healthy persons. In five cases the patient had been under treatment by a surgeon for the incontinence or the retention which were looked upon as due to local conditions before they came under my observation. Case III. may be cited as an example of tabes in which the initial symptoms, and so far as that is concerned, the symptoms up to the present time, after the disease has lasted seven years, are referable to the bladder, as illustrative of this point.

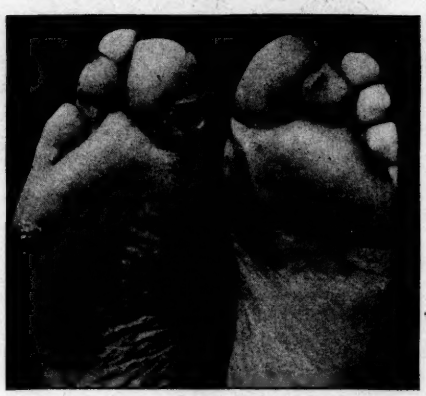
Impotency.—Complete impotency was noted in 27 cases; partial impotency, *i. e.*, capacity for intercourse rarely and incomplete, and unsatisfactory efforts in 36 cases. In the majority of these impotency became complete. If to these figures there is added the result of inquiry on this point in female tabics, in which a condition akin to impotency was found five times out of 12 female patients, who could be interrogated intelligently on this topic, it will be seen that there was im-

pairment of the sexual reflexes in 68 cases, *i.e.*, about 50 per cent. In three cases there was exaltation of sexual desire, accompanied with increased capacity. Two of these cases were seen early in the disease, and remained under observation sufficiently long enough for me to observe the disappearance of the symptom. In 12 cases indulgence in sexual intercourse was followed by disagreeable symptoms, feeling of prostration, neuralgic pains, sense of constriction in the rectum, desire to urinate, etc. It was recorded in 10 cases that the patient was still potent. In six of these the subjective and objective symptoms of the disease were well marked, the patients being distinctly in the ataxic stage of the disease. In two cases copulative capacity was regained after it had been lost for a protracted period.

Trophic Lesions of the Joint.—Arthropathies (Charcot's Joint). Perforating Ulcer.—Tabic arthropathy, the name applied to painless enlargement of the joints in tabes, was noted as having occurred seven times in my 140 cases, *i.e.*, about 5 per cent. This percentage is about the same as that given by Bramwell, by Thomas and by Marie (*Gazette Hebdomdaire de Medicine et de Chirurgie*, No. 20, 1892). In one additional case there was painless arthritis of the knee-joint, but this case is not included. The following joints were the seat of lesion in the seven cases: Ankle, hip, and thumb one each; metatarsophalangeal of the big toe, two; knee-joint, two. In two instances the enlargement of the joint was said to be the initial symptom, but close inquiry revealed the preexistence of symptoms which were undoubtedly due to tabes. In one patient, a pole-climber, the enlargement followed a trivial injury. All writers are in accord as to the great frequency with which the knee is affected. For instance, Flatow finds the knee to be the seat of the lesion in 60 of 140 cases. It is a well-known fact also that tabetic women are more liable to the disease than men. Weizsaecker reviewed 100 cases, 39 of which were women. In no case was there noted any enlargement of the muscles around the affected joint, such as Donath has spoken of (*Wiener klinische Rundschau*, Vol. XVI, No. 43, 1902) as having occurred in the muscles of the calf in a patient with arthropathy of the knee, nor any calcification of the tendon inserted around the involved joint. The time of the appearance of arthropathies in tabes is, however, very variable. In a review of 132 cases Kradel (Volkmann's Sammlung klinischer Vorträge, 1888) has shown that 21 cases occurred in the prodromal stage of tabes; 38 cases between the first and fifth year, 32 cases between the fifth and tenth year, and 41 cases after the tenth year.

Trophic lesions of the skin and soft part were noted in 12 instances. One case had repeated attacks of urticaria. In two cases a herpetiform eruption developed on the buttocks. After lasting from one to two weeks the eruption would entirely disappear, leaving a red area corresponding to the seat of the eruption which would gradually grow smaller. One patient had lost the toes of the right foot. He said that he had a disease of them which was due to syphilis which necessitated their amputation. Whether or not the condition was gangrene due to syphilitic ar-

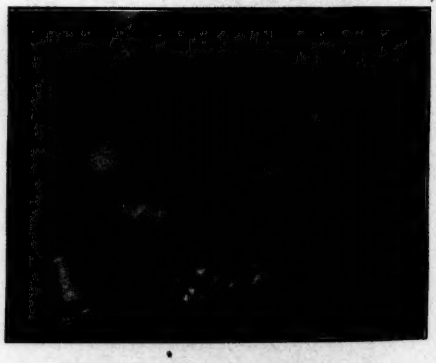
Fig. 7.



To illustrate perforating ulcer of tabes.

teritis or not, I cannot say, but this patient had well-marked arterial disease. In four cases there was proliferating ulcer, three of the feet and one of the coccyx. When the ulcer develops in the foot, its commonest location is on the sole. In some cases it is along the borders of the foot. In one of my cases a corn was the starting point

Fig. 8.



Deformity of the feet resulting from muscular atrophy. The right foot shows pronounced plantar flexion of the toes, especially the big toe.

of the ulceration. The characteristic appearance of the lesion is well illustrated by Fig. 7. In one case the teeth became loosened. In this patient the paresthesia in the distribution of the trigeminal nerve was one of the most distressing symptoms. In two cases the toe nails were affected so that the nails of the big toes dropped off. In one case minute hemorrhages beneath the

skin occurred at the end of a very severe attack of pain in the legs.

Muscular atrophy of sufficient degree to be noted was recorded in 18 cases. Of these 18 cases it was a late manifestation in 15, symmetrical in its distribution and more often of the lower extremities than of the upper, of the general appearance of inactivity atrophy and not accompanied with reaction of degeneration. When the atrophy was of the legs some deformity of the foot, such as depicted in Fig. 8, constituting the so-called tabic pes cavus, or pied bot of the French writers, was the result. The deformity may be overcome by manipulation, *i.e.*, there is no fixation in the joint and no contracture of the muscles. The deformity is a simple, atonic

Fig. 9.

To illustrate pronounced muscular atrophy in the lower extremities of a female patient with tabes, duration of disease four years.

one and naturally is seen only in those who are confined to a chair or a bed. Now and then a case is encountered in which there is profound atrophy of the legs without deformity of the feet. Such a case is depicted in Fig. 9. In three cases the muscular atrophy or amyatrophy, occurred comparatively early in the course of the disease and was accompanied by fibrillary contractions and reactions of degeneration which bespoke its dependency upon its involvement of the primary motor neuron. In all of these cases the atrophy was of the upper and cephalic extremities. One of them has been cited. (Case II illustrative of tabes with bulbar involvement.)

Disturbance of Sleep.—Insomnia is often a distressing symptom in tabes and in a few cases it is an early manifestation. It is recorded in the histories of my 140 patients that it was sufficiently severe to be noted in 21 cases, *i.e.*, 15 per cent. There is nothing characteristic about the insomnia in these cases. The sleeplessness of some of them is a part of the general emotional perturbation that goes with the recognition of the seriousness of their disease. In others it is an expression of the lowered vitality which the disease causes. I have not noticed the occurrence of dysomnia in tabic patients sufficiently often to make it worthy of mention.

Vertigo.—Vertigo was a symptom sufficiently severe in eight cases, 5.7 per cent., to have it noted in the histories as a conspicuous symptom, but on investigating the statistics it seemed that vertigo was a commoner symptom than indicated by these figures, but it was found that a number of patients said they had "dizziness in the head" when they really meant that they were uncertain of station and gait. Considering the frequency with which arterial fibrosis was noted, it is rather astonishing that vertigo was not spoken of more frequently by the patients. In one case only was it of great severity, and in that case a typical example of Meniere's disease. The symptom was so severe that it overshadowed for a time those of the tabes, unless, indeed, it can itself be considered a symptom. This symptom-complex occurring in tabes has been studied by Marie and Walton (*Revue de Medecine,* 1883) by Marina (*Arch. f. Psychiatrie,* Vol. XVI.) Grasset (*Arch. de Neurologie,* 1895), and others.

Disturbances of Hearing.—Partial or complete deafness was noted only in a very small proportion of cases, nine. In three of these it was unquestionably due to catarrh of the Eustachian tube. In one case deafness set in abruptly and involved both ears. In the other case the auditory examination was not undertaken with the care and completeness which is necessary before one could say positively upon what it is dependent.

Condition of the Urine.—Examination of the urine was not undertaken methodically in all cases apparently, for there is record of such analysis in only about one-half of the cases. It is noted that sugar was found in three cases, two of which were very typical cases of tabes, the other being a case in the preataxic stage. The first of these three patients developed true diabetes, the second and third had glycosuria. Albumin was found at times in seven cases. In two of these there was no question of the existence of chronic interstitial and tubular nephritis, in two the patients were addicted to the intemperate use of alcohol, and in another there was generalized arteriosclerosis.

Loss of Weight.—In 37 cases it was noted that there was a marked loss of weight, and in many of these the occurrence of emaciation was followed by the development of severe symptoms. In five cases there was a very considerable increase in weight, and in two of these the increase extended to beyond 50 pounds, and interfered with the patient's comfort.

Mental Symptoms.—In many cases of tabes there are no mental disturbances whatsoever, and it may be said that perhaps one of the characteristic features of the disease is that its victims remain in full possession of their faculties. Many of them not only follow their callings or occupations for 10 to 25 years, but personally direct large interests, and discharge arduous civic, political and professional duties. Even after patients become bedridden, inmates of an almshouse perhaps, they retain their mental equilibrium and are quite tenacious of life. The feeling of helplessness and despair which comes to many when they first learn of the incurability of their disease, wears away and they soon learn to accept the situation and bear their burden. Others are irritable and susceptible to every outside influence. This is especially true of those cases in which the disease displays itself in the neuralgic form, and of those who take morphine.

It has already been stated that every now and then we encounter a case in which the symptoms parallel those of tabes and of general paralysis. It is almost impossible to say positively in the beginning of the disease how they will eventuate, *i.e.*, whether the burden of the symptoms will be manifest through disease of the spinal cord (tabes) or through the brain (general paresis).

There is a certain proportion of all cases of tabes, at least there has been of mine, in which there has been conspicuous mental symptoms in the beginning of the disease which are best characterized as constituting psychical inertia, a mild dementia, a lack of initiative, of capacity for concentration or continuation upon any subject or line of thought except for a very brief period and then only at the expense of great exhaustion; of forgetfulness, and of neglect of customary social amenities. In some cases emotional symptoms co-exist, but in others they do not and the mental symptoms are no more or no less than those that have been mentioned. I have notes of five such cases. In every instance the psychical symptoms disappeared.

Disease of the Heart and Blood Vessels.—Although Gowers, Marie, Grasset and other European writers maintain that valvular disease of the heart, especially of the aortic valves, is very common in tabes, my experience does not lead me to subscribe to their views. In five cases disease of the aortic valves was diagnosticated: Aortic stenosis, twice; aortic regurgitation, three times. Mitral regurgitations were diagnosticated in two cases. In two cases aneurism of the aorta was readily to be made out and caused most distressing symptoms. In 27 cases it was remarked in the histories that the patient suffered from arterial fibrosis. This diagnosis is made in my clinic when a distinctly enlarged heart without cardiac murmur, with marked accentuation of the second sound, is made out, and when the peripheral arteries, temporal, radial and dorsalis pedis are resistant to the feel, especially if arcus senilus is found associated with it in patients under 50 years of age.

The condition of the pulse was noted in 63 cases. The lowest pulse rate was 60, the highest 117. The pulse rate recorded was that obtained after the patient had been sitting or lying quietly for at least half an hour. The two patients with the aneurism of the aorta are not included among these cases. Of these 63 cases the pulse rate was above 100 in seven instances, between 90 and 100 in 15 cases, between 80 and 90 in 21 cases, between 70 and 80 in 12 cases, and under 70 in eight cases. Thus it will be seen in the vast majority of cases the pulse frequency is increased.

Complications.—In five cases there were motor phenomena which have no place in the typical clinical picture of tabes, and which are therefore deserving of mention. In a case of high tabes there was marked wrinkling of the skin of the face and a distinct tic-like movement occurring irregularly in the right side of the face. In three cases tremor was a conspicuous symptom. In one it was principally of the upper extremities, its rapidity, five to six per second. Possibly it stood in causal relationship to previous alcoholic habits of the individual, though there were no other manifestations of alcoholic poisoning and the patient had not taken stimulants in excess for a considerable time. In another case there was distinct tremor of the lips particularly evident on purposeful movements. This patient had no mental symptoms whatsoever. He has been under my observation for a period of six years and nothing tending to indicate the superimposition of general paresis has developed. In another case there was profound tremor of the head and to a lesser extent of the entire body. The tremor of the head consists of a lateral slightly rotatory movement intentional in character, rapidity, about four per second, and somewhat under the patient's control. There is also coarse tremor of both hands, but it is not so marked as the tremor of the head. The case in every other respect was typical of tabes. The patient was a widower, forty-six years old, who had a chancre at the age of twenty-one. The initial symptoms were shooting pains in the lower extremities and leg weariness. All of the characteristic objective symptoms of tabes existed. In the fifth case in which there were noteworthy motor symptoms, the patient presented a peculiar condition of the abdomen. The abdomen, especially the epigastrium, is separated by four distinct furrows running crosswise and between the umbilicus and the tenth rib there is a never-ceasing alternating contraction and relaxation of the recti abdominis muscles and of the external oblique which constitutes a vertical rhythmic tremor. How long it had existed or how long it continued I do not know. The patient was seen a few times only in the hospital. In four cases there was muscular atrophy which was thought to be of spinal origin. These cases will be considered in detail in a future communication.

In two cases recurrent attacks of hiccough were noted. In one of these it was of much severity, in the other it seemed to come on occa-

sionally with acute indigestion. One patient complained very much of coughing spells which came on suddenly and without cause, and were in a general way paroxysmal. The patient had no bulbar symptoms.

In five cases discoloration of the skin, argyria from nitrate of silver, which had been given for therapeutic purposes, was encountered.

One patient had a painless swelling of one testicle, probably a gumma. There were no indications that the patient was syphilitic, not parasyphilitic.

In 11 cases lacrymation was recorded as having existed. In these cases it was probably sufficiently annoying to the patient to have him complain of it. It seems noteworthy that the clinical phenomena of Graves' disease were not encountered in any case of this series. Five cases diagnosticated as tabes eventuated in general paresis.

The following shows the percentage of the frequency of the most conspicuous subjective and objective symptoms: Lancinating pain, 90; Romberg sign, 85; loss of Achilles-jerk, 88; loss of knee-jerk, 84; Argyll-Robertson pupil, 77; ataxia of gait, 73; hypotonia, 72; paresthesia, 73; anesthesia, 67; analgesia, 58; bladder symptoms, 55; impotency, 50; crises, 20; ocular paralysis, 10; arthropathies, 5; trophic symptoms, 8; optic atrophy, 14; girdle sensation, 30; deep sensibility, 63; diplopia, 22.

PRIMARY TUBERCULOSIS OF THE EAR FOLLOWED BY MASTOIDITIS: REPORT OF FOUR CASES.*

BY M. A. GOLDSTEIN, M.D.,
OF ST. LOUIS;
PROFESSOR OF OTOLOGY, MARION SIMS-BEAUMONT COLLEGE OF MEDICINE; CONSULTING AURIST AND LARYNGOLOGIST TO THE ALEXIAN BROTHERS' HOSPITAL, ETC., ETC.

TUBERCULOSIS of the ear, secondary to and associated with tuberculous processes in other parts of the body, is not of infrequent occurrence, and of the available statistics it may be of interest to mention that Schwabach[1] found in the examination of 139 hospital patients affected with tuberculosis pulmonalis eight cases of aural suppuration, or 6 $^{9}/_{10}$ per cent.; in another series of examinations 139 tuberculous patients included 11 where otitis media suppurativa was present, or 7 $^{9}/_{10}$ per cent. Moldenhauer[2] cites 294 cases of tuberculosis in which were found seven cases of otitis media suppurativa, or 2 $^{4}/_{10}$ per cent.; Bezold[3] maintains that tuberculosis of the ear is not at all a rare complication. Steinbruegge[4] admits the frequency of aural invasion in tubercular patients, but raises the question: "Are we dealing with the local appearance of a general tuberculosis or with a coincident infection by other germs."

In the post-mortem examination of the temporal bone in 17 tuberculous subjects Habermann[5] determined the presence of tuberculous lesions of the petrosa, or 33 per cent. Schwabach[6] in 26 post-mortem examinations confirmed the presence of tuberculous invasion of the ear in 16 cases, or 81 $^{5}/_{10}$ per cent.

While the results of these clinical and pathological data are considerably at variance, we may readily assume that the ear is comparatively often affected in the course of systemic tuberculosis; yet every ear affection coming under observation in the course of a tuberculous invasion must not be considered as a tuberculous process per se. The statistics above cited are from the summary of Bruck.[7]

The first specific records of localized tuberculous invasion of the ear are those of Bobone,[8] von Breuning,[9] Gottstein,[10] and Morpurgo,[11] all of which were published during the year 1883 and about the time of Koch's discovery and earliest description of the *Bacillus tuberculosis*. No doubt specific lesions of this character were frequently observed prior to this period, but the discovery and nomenclature of the *Bacillus tuberculosis* first made possible the certain diagnosis of primary tuberculosis of the ear.

In a study of the bibliography of this subject we find that 33 cases of definite tuberculosis of the ear is an extremely difficult one—difficult beservers. There is no doubt that a careful bacteriological examination in the frequent otitis media suppurativa accompanying general tuberculosis would add largely to this limited number of reported cases. Of the 33 cases thus far published of otitis tuberculosa there are only three recorded which have been definitely determined as primary tuberculous lesions. These are the cases of Williams,[12] "Primary Tubercular Inflammation of the Middle Ear," Trans. Minn. Med. Soc., St. Paul, 1885, pp. 161-163; H. Knapp,[13] "A Case of Primary Tuberculosis of the Mastoid Process," *Archives of Otology*, N. Y., 1894, XXIII., p. 84; J. F. McCaw,[14] "Tuberculous Otitis Media, Mastoiditis and Meningitis in an Otherwise Apparently Healthy Adult," MEDICAL NEWS, October, 1901. Milligan,[15] in an exhaustive paper in a general consideration of the subject, presented to the sixth international Otological Congress, concludes that primary tuberculous lesions of the middle ear joining mastoid cells are comparatively common, especially among the children of the poorer classes. In the other 30 reported cases the lesions are not recorded as primary tuberculous invasion of the ear, nor are there evidences presented to this effect.

It must be conceded that the establishment of a positive diagnosis of primary tuberculosis of the ear is an extremely difficult one—difficult because of our inability to eliminate slight old pulmonary lesions which might have become encapsulated or systemic tuberculous lesions elsewhere, where such original foci are not revealed even on most careful and repeated physical examination. As the pulmonary tissue is the *locus minus resistentiæ* of invasion of the *Bacillus tuberculosis* we assume that most tuberculous processes have their origin there. Many of us have had actual evidences in the post-mortem room of

* Read at the Eighth Annual Meeting of the American Laryngological, Rhinological and Otological Society, Washington, D. C., June 3, 1902.

active tuberculous lesions in remote organs, which were not assumed as primary, and on closer study and investigation fibrous deposits, encapsulated cavities and pathologically typical tuberculous foci have been found, which had long since ceased their active disturbance and which remained as silent proof of the fact that these so-called primary lesions were actually but secondary, metastatic infections.

On the other hand, in the light of recent clinical and pathological research is it not reasonable to assume that a tuberculous infection can exist primarily in the upper respiratory tract or ear before the lungs are actually involved? There are several facts to corroborate this observation. In the first place, the *Bacillus tuberculosis* is found with surprising frequency in the microscopical examination of even the healthy pharyngeal mucosa. Again, the predisposition to tubercular infection very often includes a mucosa of the upper respiratory tract far below par, anemic and poorly nourished, and showing every evidence of weakened physical vitality. It is this same mucosa which first harbors the tubercle bacillus and makes this area one of imminent danger to infection. We have had well-substantiated cases reported of primary tubercular infection of the tonsil, pharynx and larynx, where even the autopsy revealed no other lesions or systemic tuberculous invasion.

From a bacteriological and pathological view the ear should be recorded as in integral part of the upper respiratory tract, because of its intimate association and direct continuity of its mucous surfaces with this area. It may be generally stated that over 70 per cent. of the inflammatory and infectious processes which involve the ear have their origin in the pharyngeal and nasopharyngeal cavities. It would seem logical then to include tuberculous infections in this class.

When a case of primary tuberculosis of the ear is reported, a microscopical examination of the discharge from the ear reveals the presence of *Bacillus tuberculosis*, the clinical data recorded as those of a typical tubercular invasion, and autopsy examination finally strengthens this pathological chain by excluding the presence of tuberculosis in all of the principal organs and tissues of the body (as in the case reported by McCaw), I think we may positively assert that primary tuberculosis of the ear does exist.

I have simply mentioned these data briefly to substantiate my conviction that a primary tuberculous infection of the ear per se is not only theoretically possible but actually more frequent than a first consideration of the subject would indicate.

To further substantiate this conclusion clinically I take pleasure in reporting the four following cases:

Case I.—H. M., colored, male, 6½ years of age, well nourished and of average strength and activity. At the age of three years patient contracted measles, from which he recovered without any of the frequent aural complications. One year later an intense acute earache of several days' duration ensued, followed by a copious, purulent discharge; for eighteen months the discharge continued freely and uninterruptedly without the accompaniment of any unfavorable symptoms. May 1, 1894, the patient first came under my observation. I then lost trace of him for two months. When he returned the discharge had stopped, due to the plugging of the entire external auditory canal with a viscid, cheesy mass, which on examination proved to be composed of partially dried and inspissated pus, epithelial shreds and detritus, emanating a very fetid and offensive odor. The entire mastoid process was sensitive to slightest pressure, and the typical symptoms of mastoid infiltration were present. There were distinct points of fluctuation, especially just below the linea temporalis. A marked and almost complete facial paralysis was demonstrable on the affected side. A small sinus, from which a spicule of bone had been recently discharged, was patulous, located almost over the apex of the mastoid process.

On entering the mastoid, evidences of a severe necrotic process were seen, and the entire cellular bone structure had been converted into a rotten, cheesy mass. A long sinus was exposed to view, leading downward and forward with a depth of nearly two inches, and diameters varying from one-half to one inch.

The subsequent treatment of this case was an unusual one and offered several points of much interest. First, there was an exfoliation of five distinct bone sequestra, in one of which was included the cochlea and the major part of the posterior semicircular canal. Second, an examination of the contents of the mastoid removed during operation showed the presence of numerous giant cells and groups of tubercle bacilli in almost pure culture. Earlier in the history of the case a microscopic examination was also made of the discharge from the ear and the presence of tubercle bacilli demonstrated. A careful physical examination at that time gave no indication of a phthisical onset, so every precaution was used to detect any change in the condition of the lungs. Three weeks later incessant coughing, profuse expectoration, rise in temperature, enlargement of the superficial lymphatic glands, rapid emaciation, great prostration and finally the involvement of the lungs, and, as determined by later examination, the demonstration of the presence of the *Bacillus tuberculosis* in the sputum occurred. This well-marked symptom-complex points to the development of a rapid phthisical process. It seems rational and reasonable to conclude that this miliary tuberculosis was perhaps a secondary development of the original tubercular infection of the ear.

In the post-mortem examination several months later the diagnosis of a rapidly developing miliary tuberculosis as an infection secondary to the aural disease was substantiated, as the pulmonary lesions and those of other organs in the body indicated the infection of these areas to be more recent than that of the ear.

Case II.—M. S., white, female, thirty-two

years of age; history of mastoid fistula during childhood, the result of mastoid abscess which had not received attention. When this case was first brought to my notice in June, 1899, an early mastoid operation was indicated. The discharge had continued intermittently ever since the early mastoid invasion. During the last few months the discharge has been sanious and foul-smelling in character. The patient complained of acute, sharp pains in the area of the mastoid. Examination revealed much soft granulation tissue in the fundus of the external auditory canal, the canal wall somewhat sagging and the mastoid areas showing beginning infiltration, and was extremely sensitive on the slightest pressure, marked rise in temperature. On exposing the antrum by the Schwartze operation this whole area was seen filled with unhealthy granulations and suspicious-looking cheesy deposits. This was carefully curetted, as was also the granulation tissue in the middle ear cavity, and an unusually large opening was made in connecting the antrum with the tympanic cavity. Examination of the cheesy deposit taken from the mastoid cells and antrum revealed the presence of *Bacillus tuberculosis*, in some fields almost in pure culture. A thorough physical examination of the patient failed to reveal the presence of any other tubercular lesion. The wound began healing satisfactorily, but during the later stages of convalescence it was noticed that the granulations filling the site of the operation were unsatisfactory in character, and a stubborn, scant discharge was maintained. Unfavorable symptoms gradually developed and in November, 1899, the radical operation was performed. The largest portion of the previously operated mastoid area appeared healthy and the granulations firm. Along the direct tract of the antrum and tympanic cavity, however, there were indications of reinfection. A radical curettement was made of the entire mastoid cell-structure of the antrum and tympanic cavity. One inch of the lateral sinus was exposed and found healthy; some of the deeper points in this large excavation which could not be readily reached by the small curette were touched with pure guaiacol. When last seen, one year ago, the wound had completely healed; discharge from the auditory canal had ceased; general condition of the patient constantly improving and with no secondary tubercular involvement apparent after repeated careful physical examination.

In the interim between June 10, 1902, the date of reading this paper before the American Laryngological, Rhinological and Otological Society and December 10, the date of sending this manuscript for publication, the patient again presented herself at my office. I found a small sinus extending deep into the petrosa, and the patient complained of intermittent pain radiating from the mastoid area upwards, forward and backward. I decided on a third operation, and this was done October 25, 1902. The entire mastoid area was freely exposed and was found filled with firm, healthy granulations. The area over the lateral sinus which had been exposed at the previous operation was seen covered with tough, fibrous and well-organized tissue. The site of the reinfection proved to be in the superior wall of the cavum tympanum and aditus. No pus was found, but some broken-down granulations and small scattered foci of grayish caseous masses. There was a carious opening through the tegmen tympanum and a small area of dura was exposed at this point. This was carefully examined by liberal exposure of the dura. A thorough curettement was done of all soft granulation tissue and caseous particles, and the entire tympanic cavity was carefully cleansed. The antrum had been obliterated and freely opened in the previous radical operation. The patient is doing nicely at this writing, December 10; there has been no rise in temperature, but slight pain, and the wound at each dressing looks clean and is granulating nicely.

In the two previous mastoid operations undertaken in this case the presence of *Bacillus tuberculosis* was definitely demonstrated. In this last operation I also had a microscopical examination made of the scrapings of the wound and of the caseous particles, and as an additional precaution requested the inoculation of a guinea-pig, and append herewith the report of the pathologist:

"DEAR DOCTOR: I beg to report that the 500-gram guinea-pig which was inoculated with material from the mastoid cells, submitted to me by you October 25, 1902, having shown no symptoms to date, was killed. No signs of tuberculosis were present. I found no tubercle bacilli in the smears, as previously reported.

"Very truly yours,

"R. B. H. GRADWOHL."

This seems to indicate either that the tuberculous element has been eliminated or that it is not at present active.

Case III.—S. M., white, female, age eight years; history of chronic suppurative otitis media in right ear of six months' duration, following scarlet fever. The patient lived in rather unhygienic surroundings in the tenement district, and the ear had received no previous treatment whatever. She presented herslf at my clinic at the Beaumont Hospital Medical College in March, 1897, with an acute mastoiditis following the chronic suppurative otitis media. A Schwartze mastoid operation was performed before the class. Some of the granulation tissue and foul-smelling detritus from the mastoid wound was stained for tubercle bacilli and examined while the patient was still on the table. To my surprise large numbers of giant cells and groups of pure culture of tubercle bacilli were found. I did not suspect the presence of this specific infection in this case, for there was absolutely no clinical evidence of it until the mastoid cavity was exposed. The child was otherwise well nourished and apparently healthy. The patient made an uneventful recovery after this mastoid operation and is well to-day.

Case IV.—J. S., male, colored, fifty-eight years

of age; barber, single. Applied for treatment at my clinic in 1896 for chronic suppurative otitis media, right. This had existed for some seven or eight years, and upon examination the middle-ear cavity was found filled with granulations and a thin, greenish, foul-smelling pus. A curettement of this tissue was made, and during the operation several small carious areas in the attic were determined. The wound was packed with gauze and the patient instructed to return the following day. I regret to say that we lost trace of him, and it was reported that he had left the city for the South, so that I was unable to determine a further status of this case or of his general physical condition. The curetted granulation and pus, however, were examined and tubercle bacilli were found. In the first syringing of the ear in this case the malleus was washed out. Part of the head of the malleus and the processus brevis were found necrosed.

I also wish to report in this series another case of tuberculosis of the mastoid, which, from the post-mortem evidences, cannot be included in the class of primary tuberculosis of the ear. The otitis tuberculosa followed in the course of an old pulmonary tuberculous lesion. This case is reported from the practice of Dr. Joseph Beck, of Chicago, the post-mortem specimen of the mastoid having been presented to me. The notes of this case are as follows: Female, sixty-two years of age, had otitis media suppurativa chronica for a number of years, with an outgrowth, bony in character, in the external auditory canal. From time to time she gave a history of pain in the mastoid region. Discharges were examined and found to be tuberculous. The patient developed a basilar meningitis and enteritis, and died after a week's illness. Post-mortem examination found the mastoid process filled with granulations of tuberculous nature. The ossicles were not destroyed. Old tuberculous scars were found in the apices of both lungs.

From this series of cases and their definite clinical and pathological data, I think that I am justified in my conclusions as to the primary character of the tuberculous infection of the ear. All of these cases were seen more than three years ago; three of the four are still living, and careful physical examination fails to show any present tubercular affection. There are no evidences in the histories of these cases or in their clinical development, either of acquired or hereditary tuberculosis in the families of these patients. Of the four cases, three involved the mastoid cells extensively, and showed an unusually active and rapid invasion. All of the cases developed from a pre-existing otitis media suppurativa chronica, and appeared to me as direct infection by the bacillus tuberculosis. In the three cases where the mastoid operation was performed, the wounds healed by firm granulations, and all evidences of tuberculous trouble ceased with the removal of the local process. This is in direct contrast to the healing of wounds in patients where the systemic tubercular invasion is present. The data which have been furnished in the cases herein reported all point to definitely localized specific infection of the cavum tympanum and mastoid cells, with the characteristic development of a tuberculous process as it occurs in bone tissue, and with the definite demonstration of the *Bacillus tuberculosis* in each case.

REFERENCES.

1. Schwabach—Ueber Tuberculose des Mittelohres—Berlin Klinik, 1897, Vol. CXIV, p. 1-56.
2. Moldenhauer—Zur Statistik des Erkrankungen des Hörorganes in Folge von Lungentuberculose—Monatsschrift für Ohrenheilkunde, 1885, No. 7.
3. Bezold—Ueber das Verhalten der im Laufe von Phthisis pulmonalis auftretenden Mittelohreiterungen unter dem Einfluss der Koch'scher Behandlung—Arch. f. klinische Medicin, Vol. XLVII, p. 623.
4. Steinbruegge—Pathologische Anatomie des Gehörorgans, Berlin, 1891.
5. Habermann—Neue Beiträge zur patholog. Anatomie der Tuberculose des Gehörorgans—Sitzungsbericht des Vereins deutscher Aerzte in Prag, March, 1888.
6. Bruck—Tuberculosis of the Ear—Journal of Tuberculosis, January, 1901.
7. Bobone—Sopra alcune osservazions di otite media purulenta nella tissi—Boll. d. mal. d. orecchio, d. gola, e. d. naso, Firenze, 1883, Vol. I, p. 33-41.
8. von Bruening—Scrofulose Krankheiten des Gehörorgans—Med. chir. Centralblatt, Wien, 1883, XVIII, 561.
9. Gottstein—Die Bisherigen auf das Vorkommen der Tuberkelbacillen bei der Otorrhea gerichteten Untersuchungen und deren Bedeutung für die klinische Diagnosis—Zeitschr. f. Ohrenheilk., 1883, XIII, 202-205.
10. Morpurgo—Appunti sulla otite media piogenica che accompagna la tuberculosis—Boll. d. mal. d. orecchio d. gola e. d. naso. Firenze—1883—I, 97-102.

BIBLIOGRAPHY.

TUBERCULOSIS OF THE EAR—PRIMARY.

Knapp—Ein Fall primärer Tuberculosis des Processus mastoideus—Arch. Otology, N. Y., 1894, XXIII, 64.

McCaw—Tuberculous Otitis Media, Mastoiditis and Meningitis in an Otherwise Apparently Healthy Adult—MEDICAL NEWS, N. Y., Oct. 12, 1901.

Williams—Primary Tubercular Inflammation of the Middle Ear—Trans. Minnesota Med. Soc., St. Paul, 1885, 161-163.

TUBERCULOSIS OF THE EAR—NOT PRIMARY.

Barnick—Klinische und pathologisch-anatom. Beiträge zur Tuberculose des mittleren und inneren Ohres—Arch. f. Ohrenheilk., XLVII, 156.

Bobone—Sopra alcune osservazione di otite media purulenta nella tissi—Boll. d. mal. d. orecchio, d. gola e. d. naso—Firenze, 1883, I-33.

Bobone—Varie forme d' otite media purulenta nei tuberculosi—Ibid., 1890, VIII, 33-35.

von Breuning—Scrofulose Krankheiten des Gehörgangs—Med. chir. Centralblatt, Wien, 1883, XVIII, 561.

Cardone—Ein besonders interresanter Fall von Otitis Tuberculosa—Monatsschr. f. Ohrenheilk., Berlin, 1887, XXI, 209-211.

Cossolino—Un bambino con tuberculosi di tutte le cavita esterna e media auricolari sinistra, operato radicalementi; guarigione con scomparsa della paresi da compressione de 7° e riacquista relativo dell' audizione—Atti d. r. Accad. med. chir. d. Napoli, 1896, n.s. l. 121-133.

Eitelberg—Auffallend protrahierte Entwickelung einer eitrigen Mittelohrentzündung in drei Fällen von Tuberculose—Zeitschr. f. Ohrenheilk., Wiesbaden 1887-8, XVIII, 1-4.

Gottstein—Die bisherigen auf das Vorkommen der Tuberkelbacillen bei der Otorrhea gerichteten Untersuchungen und deren Bedeutung für die klinische Diagnose—Ibid., 1883-4, XIII, 202-205.

Guranowski—Przypadek gruzliezego Zapalenia ucha sredniegokilka uwago sprawach gruzliezyeh ucha wogole. (Otitis media tuberculosa, with remarks on tuberc. processes of the middle ear.)—Medycyna, Warsaw, 1894, XXII, 751, 777, 791.

Habermann—Mittheilung über Tuberculosa des Gehörgangs—Prag. Med. Wochenschr., 1885, X, 50.

Habermann—Ueber die tuberculöse Infection des Mittelohres—Zeitschritt f. Heilk., Prag., 1885, VI, 367-398.

Habermann—Neue Beiträge zur pathol. Anatomie der Tuberculose des Gehörgangs—Ibid., 1888, IX, 131-161.

Hamel—Ein Fall von beginnendem Durchbruch der beiden Labyrinthfenster bei Caries Tuberculosa des Mittelohres, mit mikroskopischer Untersuchung—Zeitschr. f. Ohrenheilk., 1895-6, XXVIII, 42-45.

Knapp—A Case of Chronic Purulent Otitis Media; old pulmonary tuberculosis: opening of the mastoid; death from acute basilar meningitis; autopsy—Trans. Amer. Otol. Soc., 1891-3, V, 205-209.

Lavrand—Tuberculose récente de l'oreille moyenne dans un cas de relâchement ancien de la membr. tympanique—Bull. Soc. d. sc. med de Lille, 1889, 130.

Morfie and Newman—Suppurative disease of the ear, associated with tubercular nodules in the brain—Trans. Glasgow Path. and Clin. Soc., 1892, III, 71-73.

Milligan—Tuberculous disease of the mucous membrane of the middle ear and its adnexa; an experimental investigation—British Med. Jour., 1895, II, 1223-1226.

Milligan—Tuberculous disease of the middle ear—Med. Chron., 1895, N. S., IV, 254-262.
Monscourt—L'Otite moyenne tuberculeuse—4°—Paris, 1896.
Monscourt—L'Otite moyenne tuberculeuse—Gaz. habd. d. med., 1896, XLIII, 855-859.
Monscourt—L'Otite moyenne tuberculeuse chronique—Gaz. d. hop., 1897, LXX, 589.
Morpurgo—Appunti sulla otite media piogenica che accompagna la tuberculosi—Boll. d. mal d. orecchio. d. gola e. d. naso—Firenze, 1883, I, 97.
Morpurgo—Studio statistico sulla malatti dell orecchio negli scrofulosi e sull' influenza dei bagni di mare—Arch. Ital. d. Otol., Torino, 1897, V, 113-126.
Müller—Ein Fall von Erkrankung an acuter tuberculöser Mittelohrentzündung während einer Cur mit Neutuberkulin (T. R.)—Deutsche med. Wochenschr., 1897, XXIII, 541.
Nathan—Ueber das Vorkommen von Tuberkelbacillen bei Otorrhean—Deut. Arch. f. kl. Med., 1884, XXV, 491-513.
Oppenheimer—Tuberculosis of the middle ear—Med. Times and Register, N. Y., 1898, XXXVI, 261-264.
Péon—Otite moyenne suppure chez un tuberculeux carie du rocher et polypes de la casse; extraction d'un sequestre; cauterization des polypes; amelioratio—Leçons de clinic-chir, etc., 8°, Paris, 1888, 629.
Ritzfeld—Ueber die Tuberculose des Ohres—8°, Bonn, 1884.
Scheibe—Ueber leichte Fälle von Mittelohrtuberculose und die Bildung von Fibrinoid bei derselben—Zeitschr. f. Ohrenh., 1896, XXX, 366.
Shield—Mastoid disease (tubercular) in a child, age twelve mos.; removal of a deeply seated sequestrum; cure—Clin. Jour., London, 1896, VIII, 389.
Schwabach—Ueber Tuberculose des Mittelohres.—Berliner Klinik, 1897, CXIV, 1-56.
Verneuil—Suppuration chronique de l'oreille moyenne; osteite tuberculeuse du temporal—Clinique, Brux., 1896, X, 729-735.
Voltolini—Ueber Tuberkelbacillen im Ohr—Deutsche med. Wochenschr., Berlin, 1884, X, 483.
Watsuji and Kuroiwa—[Phthisis of the middle ear] Chiugai Iji Shimpo—Tokio, 1896, XVII, 395.
Winkler—Ueber Tuberculose des Mittelohres—Aerztl. Rundschau, München, 1898, VIII, 278.

3858 Westminster Place.

MEDICAL PROGRESS.

SURGERY.

Multiple Myeloma of Bone.—The following propositions concerning multiple myeloma of bones are offered by P. VIGNARD and L. GALLAVARDIN (Rev. d. Chir., Jan. 10, 1903): Among divers telangiectatic forms of tumor of bone, there may be distinguished as a distinct type primary multiple tumors of bone. These have the essential character of developing at several points of the osseous tissue simultaneously, for it is not possible to distinguish in many cases the primary from the secondary deposits, and this outbreak of tumors appears everywhere in the red marrow, especially in the sacrum, ribs, vertebræ, etc. It is never accompanied by visceral ectastases, which remain confined to the bones. This group of primary multiple tumor of bone does not constitute histologically a homogeneous entity, for some lymphadenomatous and for others endotheliomatous, and, finally, a third series of myelomatous, a term denoted by various authorities significant of special structure. The multiple myeloma of bone, among other characteristics in common with other primary tumors has distinctive features, for example, an extremely large number, very possibly a clinical rotency of rapid cachexia, fever, derminal coma, and finally, albumosuria, as originally described by Bence-Jones. This last character may or may not be a constant or specific feature of the disease, a point which must always be decided by subsequent research.

Pathogenesis of Hydronephrosis.—In the subject of hydronephrosis, especially of the intermittent type, P. BAZY (Rev. d. Chir., Jan. 10, 1903) offers the following facts: It usually has its origin in the congenital disposition of the pelvis and accessories of the ureter. The maximum degree of congenital condition which would permit a hydronephrosis would be realized in a voluminous pelvis of horizontal type, latter bent or elbowed or twisted. This condition is truly rare, correspondingly in fact as the disease itself. Accessory conditions of the ureter are stricture and false torsures, especially at the upper extremities. Intermittent hydronephrosis may also be caused by mobility of the kidney, but in the opinion of this writer, ptosis and mobility of the kidney are really secondary conditions to the hydronephrosis. Stagnation of a small quantity of urine in a congenitally large pelvis may also favor this disease. This cause constantly repeating itself in virtue of some congenital condition which favors it, even in a very small degree, finally brings the kidney to a condition of increase in size and weight. Then follow displacement and the condition of stagnation, and thus the first stage of intermission in the hydronephrosis is established. Torsions, folds and bends in the ureter which result from the ptosis, which are either created or augmented by the ptosis, may become fixed by adhesions or by a sclerosis in the wall of the tube, due to irritation, which itself is secondary to the mild infection or primary without infection, in virtue of the mechanical arrangement of the parts. Intermittent hydronephrosis may follow this type, either from the very outset, or after and in virtue of a number of attacks. The permanent, definite condition is, of course, created by adhesions which fix the ureter and hinder the pelvis of the kidney from emptying itself on the one hand by simple position of the pelvis and on the other by a diminution in the caliber of the ureter.

Costal Hydatid Cyst.—On the diagnosis of this rare condition H. GERAND and R. MIGNOT (Rev. d. Chir., Jan. 10, 1903) offer the following points: Commonly, hydatid cyst of bone passes unnoticed until a spontaneous fracture, pathologically, calls the attention of patient and surgeon alike to the affected bone. The condition might suggest spontaneous fracture secondary to tabes, to gumma or to sarcoma. The tabetic fracture would be recognized by the other signs of locomotor ataxia; the gummatous fracture by the history of syphilis early in the patient's career; the osteocope by the fact that, contrary to the case in hydatid cyst, it will recover under immobilization and antisyphilitic treatment. Fracture of the bone, due to sarcoma, usually is followed by rapid development of the neoplasm, and accompanied by the local temperature and by prominence of the subcutaneous veins, and often by expansile movement, particularly if the sarcoma is of the vascular type. Aside from this accident of fracture, the disease is characterized by a slowly developing torpid tumey fracture, and should be differentiated from osteitis sarcoma, and particularly from tuberculous osteitis, of which the clinical picture very closely indeed simulates that of the septic condition. The tension of the tumor is much less than in tubercular osteitis in the hydatid cyst, which gives the sensation of an extensive, resistant, dense pocket. It is very certain, however, that the diagnosis is exceedingly difficult, and one is much more inclined to make a diagnosis of a cold tubercular abscess of bone than of a hydatid cyst. The last and final means of diagnosis, of course, is aspiration with a needle, or, better still, exploratory incision. The treatment is necessarily surgical, and consists, briefly, in removing the entire disease without rupturing the cyst. If this appears infected, the raw surfaces of the wound in all directions must be protected in order to avoid secondary infection.

An Unusual Case of Strangulated Hernia.—A case of strangulated hernia presenting some unusual features is reported by P. GIANNANTONI and S. GUGLIUZZO (Rif. Med., Dec. 23, 1902). The patient had for many years been in the habit of reducing the hernia himself by taxis, and experienced no great discomfort till one day, after severe muscular strain the tumor again escaped through the ring; its escape being this time accompanied with severe pain. The patient succeeded in reducing the hernia, but more than the usual

force was necessary to accomplish its reduction, and the pain persisted. Obstipation was complete from this time, and stercoraceous vomiting set in. Upon examination no evidence of hernia could be found; and with the exception of a dilated inguinal canal, nothing unusual was apparent; but from the symptoms and history given by the patient, a diagnosis of strangulated hernia reduced en masse was made. In view of the element of uncertainty in the case, it was deemed best to make a median incision from the umbilicus to the symphysis pubis. This being done, an incarcerated hernia reduced en masse was found in the right iliac fossa. The tumor was then brought outside of the abdominal cavity through incision of the inguinal canal and the radical operation for strangulated hernia performed. The authors believe that the median laparotomy should always be done in doubtful cases and in cases of strangulated hernia reduced en masse, the further treatment being accomplished readily after this preliminary measure.

Fracture of the Patella and Olecranon Treated with a Tendinous Flap.—An innovation in the management of these most troublesome fractures is described by P. FERRARESI (Policlin., Vol. IX, C. fasc. 12, 1902), the advantages of which would seem to render it a distinct improvement upon the methods hitherto used. The author describes it as follows: An incision in the median line commencing about seven cm. above the upper border of the patella and continuing to a like distance below that bone, is made. A flap two mm. thick is then dissected from the tendon of the quadriceps extensor; the base of the flap remaining attached to the superior border of the patella and its size being sufficient to entirely cover it. An assistant holds the fragments firmly together and the operator brings the flap down over the patella and sutures it securely to the patellar ligament below and to the surrounding fibrous tissue upon the sides; thus forming a resistant fibrous case for the patella, which effectually immobilizes the fragments. The functional results have been exceedingly good in the cases so treated. Much the same idea has been applied by Ferraresi to the treatment of fractures of the olecranon; a flap from the tendon of the triceps being utilized.

Strangulated Hernia in an Infant of One Month.—So rarely does this condition occur in early life, the case reported by E. FORTUN (Rev. Med. Cubana, Dec. 15, 1902) is of special interest. The patient, an infant of one month, had been referred to him with a diagnosis of strangulated hernia, and examination showed, in the right inguinoscrotal region, a tumor about the size of a lemon; percussion over it yielding a tympanitic note above, and dull note below. Vomiting was incessant and the abdomen was much distended and tympanitic; the little patient giving evidence of the greatest distress. Celotomy was performed and an incarcerated congenital inguinal hernia was found; within the sac lying the cecum and its appendix. Inflammation being present in the latter, it was resected, and the cecum reduced, following which the radical operation for strangulated hernia was performed. The child made a rapid and complete recovery.

Bone Cysts.—The treatment of bone cysts should, as a rule, be conservative. For this course of procedure the ordinary, uneventful course of healing, with good functional results which ordinarily follow, plead, in cases which have been operated on late. This and the following suggestions upon the subject are offered by G. COCH (Arch. f. klin. Chir., B. 68, H. 4, 1902). The ordinary conservative methods consist primarily in extirpating the cyst and of fixation of the bone by means of a hard splint. The walls of the cyst must be bodily removed with the chisel and bone forceps, until sound bone is laid bare. Such bone is better suited to good recovery. If the ends of the bone are difficult to fix upon each other, this point is accomplished by means of wire or other well-known media. In the various cases I have seen, a simple extension splint of plaster of Paris was applied, and healing and recovery were eral is concerned, his own experience, it is good, excepting when the cyst is due to the softening of the central parts of a malignant tumor. In cases of this description, it is possible to carry out the ordinary conservative treatment by resection of the bone in continuity, but the patient must take the precaution to return for observation, and the surgeon must be on guard to do an ex-articulation at the very first sign of relapse of the disease.

Cysts in the Teeth.—Cysts occurring in rigid organs, like the bones and the teeth, are not altogether rare, but they are very difficult of treatment and often of recognition. J. C. OLIVER (Ann. of Surg., Jan., 1903) offers the following observations on the subject: He says that the recognition of the real nature of these growths rests very largely upon the following four points: (1) Absence of a permanent tooth, after it should have been erupted, without any history of its removal; (2) the cystic nature of the growth; (3) the crackling sensation of the thin bony cyst-wall when pressed upon; (4) exploratory incision. The development of a cyst at or near the time of eruption of a permanent tooth may be of value in diagnosis, as may also the slow increase and painless development of the neoplasm. "Crackling" is by no means a constant symptom, and is inferior in diagnostic import to tapping or incision. In any case of cyst connected with either jaw, incision of the mass should precede incision of a part or all of the jaw. This conservative measure does not interfere with the radical one, and may frequently obviate any mutilating procedure. The prognosis is uniformly good, both as to the life of the patient and from an esthetic point of view. The evacuation of the cyst, removal of the tooth, thorough curetting of the interior, with subsequent packing of the cyst cavity, is the proper procedure in all cysts connected with the teeth. This mode of attack will certainly remove the growth as well as the cause of it. Cysts in connection with the teeth never require removal of osseous structure in order to bring about a cure. Of course, one can imagine the implantation of a malignant growth upon one that was originally benign, but literature on the subject does not record an example of such transformation.

Enterectomy for Malignant Disease.—In Treves' System of Surgery, published only three years ago, one finds the statement that if a growth causing intestinal obstruction be found to be malignant, it should be left in situ and the gut short-circuited. WALTER L. WOOLLCOMBE (Brit. Med. Jour., Jan. 10, 1903), in reviewing the literature of the treatment of malignant diseases of the bowels, said that so much progress had been made that statements of this kind, although so comparatively new, were already ancient history. Typically the only variety found is the cylindrical celled epithelioma which commences in the Lieberkühn glands and appears in early stage as a very minute nodule which spreads gradually around the bowels and follows the course of the vessel. The growth has a strong tendency to contract and it is this which forms a distinctive difficulty in dealing with malignant diseases as opposed to other forms of intestinal disease. Exploratory laparotomy, which has been decried so loudly in certain medical quarters, is undoubtedly coming to be recognized as the only reliable means of establishing diagnosis. This

done, the tumor should be removed in three stages: First, the delivery and fixation of the growth outside the abdomen; second, the opening and drainage of the gut above the growth; third, the removal of the growth and union of the resected gut. Two hundred plans for effecting this have been described and about 20 of these remain as practical and useful. Many cases do much better under a local anesthetic than under general narcosis, and particularly if eucaine be used a great many lives, which are now sacrificed to chloroform or ether, would be saved.

Value of the Schleich Narcosis.—A careful comparative study of the usual ether and the Schleich methods of narcosis has been made by F. v. WINCKEL (Münch. med. Woch., Jan. 6, 1903). The Schleich mixture, given in 101 cases, contained ethylchloride 2, chloroform 4, and ether, 12 parts. Plain ether was given in 60 cases and ether with morphine in 15 cases. It was found on tabulating the results that the Schleich anesthesia came on more rapidly than the others (one to three minutes), the quantity used was smaller (75:115), a fall of temperature did not occur so often, and bronchitis was less likely to follow. In ten cases, however, in which the Schleich method was used resort was had to other anesthetics on account of the development of dangerous symptoms. Considering the comparative value of the two methods, however, the after-effects attending ether narcosis seem much less severe than those attending the use of Schleich mixture and the author believes that no marked advantage attends the latter, that dangerous symptoms are more often noticed, even though the time and quantity employed are less for the Schleich mixture than for ether.

Gastric Polyp.—An interesting case is reported by F. LUCKSCH (Prag. med. Wochenschr., Jan. 1, 1903) of a mucous polyp of the stomach which in its clinical features resembled a carcinoma of the pylorus. The patient, a woman of forty-two years, complained of severe pains in the left hypochrondrium and had sustained a marked loss in weight. Vomiting was present after meals. Stools were diarrheal and dark-colored. Examination of the emaciated patient apparently revealed a tumor in the pyloric region. A few days later she died from inanition. Autopsy revealed a general miliary tuberculosis with numerous cheesy nodules in chest and abdomen. A polypoid tumor was found in the pyloric end of the stomach about 5½ cm. long, which projected through the pylorus into the duodenum. Microscopically the tumor was shown to be made up of connective and muscle tissue covered with mucous membrane. It was very vascular and infiltrated with numerous round cells. The author believes that as the result of a chronic gastric catarrh, a hypertrophy of the pyloric mucosa took place which was followed by the formation of an edematous polyp. The passage of the food current pressed it against the pylorus and the latter by its efforts at expulsion caused the gradual formation of a long pedicle with a bulbous portion at the end projecting into the lumen of the duodenum.

Paraffin Injections.—The most suitable syringe for this purpose is, according to J. A. SMURL (Am. Med., Jan. 31, 1903), a metal one modeled after Janet's. It should have a capacity of three drams and a caliber equal to that of the ordinary syringe. The needles are similar to antitoxin needles but have an elongated point. The author discards local anesthesia on account of the distention caused by the fluid which masks the field of operation. The paraffin is mixed with red vaseline in the proportion of three to one and boiled for an hour. After cooling, it is stored in an aseptic container. The syringe is filled with fine shavings when needed and heated over a spirit lamp. The injection is carefully made under the skin and molded with the fingers. Smurl thinks that no chemic change takes place after injection. He made several experimental injections of paraffin into the cellular tissue of the arm and found that in each case it became thoroughly encapsulated by fibrous tissue.

Rupture of the Urinary Bladder.—This accident may happen to one and to all three walls of this viscus. A rupture is either intraperitoneal, involving that portion of the bladder not covered by the peritoneum; or subperitoneal, the mucous and muscular walls being ruptured, leaving the peritoneal covering intact; this latter variety is very uncommon. The most frequent location of the rupture, says JOHN W. KEEFE (Am. Jour. of Obstet., Jan., 1903), is in the upper and posterior portion of the bladder, and this may be accounted for by the bladder when distended, lying in contact with the promontory of the sacrum, force applied in front, pressing the viscus against the bony point. The bladder wall is also thinnest at this point. Most ruptures located anteriorly are complicated with fracture of the pelvic bones. Atony, sacculation, and ulceration of the vesical walls are predisposing causes. Several cases are reported where the bladder wall was hypertrophied. The direct cause of rupture is usually some form of external violence applied over the region of the bladder. Rupture by contre coup has occurred, even with an empty bladder. Violent straining at stool, during micturition, and parturition has been known to produce rupture. The lesion is more common in men in the proportion of ten to one. The symptoms are shock, pain over the hypogastrium, desire to frequently micturate, inability to void urine, or possibly a few drops of blood, face is pale anxious, pulse rapid and feeble; clammy perspiration, and the abdomen becomes distended; temperature rises; delirium, coma and convulsions may ensue. The patient frequently says that he felt something give way inside. The histories of a number of cases show that the presence of clear urine in the bladder does not prove that the bladder has not been ruptured. Early diagnosis is most important; then comes the determination as to whether the rent is extra- or intraperitoneal, and if extraperitoneal the extent of the rent. In a series of 315 cases, only 16 per cent. recovered; of 21 laparotomies for intraperitoneal ruptures, 10 were successful. Early laparotomy which in itself has a mortality of from one to three per cent., should be practised in not only every known case of rupture, but even where the rupture is but suspected.

Flatfoot.—Tendon transplantation and the holding of the tendons in place in flat feet is the subject of a contribution by E. MILLER (C'blatt. f. Chir., Jan. 10, 1903). The technic which he recommends is the following: A curved incision along the border of the structure of the foot, beginning below the inner malleolus, half-way between this and the sole of the foot, and ending forward at the base of the first metatarsal bone. In the front part of the wound is seen the insertion of the tibialis anticus muscle, which is divided and isolated upward, toward the angle. Then the under surface of the bony ridge of the foot is laid bare about one centimeter outward, and then, with a trephine having the diameter of an ordinary lead pencil, a hole is cut from below upward, through the navicular bone. The opening of the tabialis anticus is then drawn through this hole with a sling of thread. The arch of the foot is then forced as far upward as possible, and the tendon through the opening is drawn back as much as possible, so that its end might be carried around the tuberosity of the navicular bone from below inward and upward, and fastened in this curved position to the periosteum with stitches. Thus the arch of the foot is held up by

this opening, as by a cord. The after-treatment usually persists for three or four weeks, and consists in massage and passive motion, followed by careful active motion, never, however, without a suitable brace for flatfoot. When the muscles have all returned to health this may be cast aside.

Vaseline and Oil for Injections.—Vaseline which remained hard below 35° C. was the original article with which R. GASUNY (C'blatt. f. Chir., Jan. 3, 1903) made injections for the restoration of various deformities. He now desires to obviate some of the difficulties of using this hard substance by using a mixture of one part of vaseline and four parts of olive oil by volume. This mixture should be prepared fresh for each application, and sterilized by boiling. It is semifluid at the ordinary temperature, and possesses diffusibility very much greater than that of simple paraffin; it therefore reaches much more completely the various cavities and recesses of the part of the body treated. This observer, therefore, finds that it has all of the advantages and none of the disadvantages of the paraffin.

Difficult Anesthetization.—Difficult or bad subjects for anesthesia by inhalation are described by H. W. HEWITT (Lancet, Jan. 10, 1903), as including all patients who, unless skilfully treated display marked excitement, rigidity and tendency, even under deep anesthesia to inconvenient reflexes, and, apart from the administration of an overdose, may pass into danger or die. They are not the subjects of grave malady, but are often those who have never been ill a day. They may be classed under six headings: (1) Patients of general good health, but possessing some physical peculiarity, with more or less liability to intermission or arrest of breathing; (2) patients whose respiratory tract is in some way encroached upon or impeded by pathological or other conditions; (3) patients suffering from grave physical or constitutional disease; (4) highly nervous or excitable patients or the victims of a nervous disease, or of alcoholic, tobacco, morphine, or other drug habit; (5) patients combining any of the characteristics of two or more of the preceding classes; (6) patients who prove to be difficult or bad subjects for anesthesia without any discoverable cause. Apart from the general rules for good anesthesia, this author concludes that a mixture of chloroform and ether, administered slowly, produce better results in these patients than either ether or chloroform alone. The mixture which he recommends consists of two parts of chloroform and three parts of ether. He likewise recommends the use of a small mouth-gag, so that oral breathing which he considers more efficient than nasal breathing, shall be entirely uninterrupted.

Operative Asepsis.—In answer to a series of questions put to the members of the Belgian Surgical Society concerning the measures employed by each for the attainment of asepsis in surgical work, A. DEPAGE (Jour. Méd., Bruxelles, Jan. 15, 1903), describes his own methods and discusses the value of various aseptic measures employed. It is his invariable rule not to touch a purulent subject before operating; all necessary dressings, in such cases, being deferred till after operations have been completed; neither does he attend autopsies before operating. All assistants are subject to the same rules. After the usual disinfection of the hands, including paring of the nails, scraping their under surface, scrubbing the hands with soap and water from five to ten minutes, and bathing them for three to five minutes in sublimate, daily cultures upon agar are made from the under surface of the nails to ascertain the efficiency of the disinfection practised; this being considered a most important procedure by the author, as, in his experience, the time necessary for disinfection varies with the individual, and repeated cultures alone determine the requisite duration of the disinfecting process in each. Such control of assistants also, is believed to be most advantageous in the maintainance of a strict regard for personal asepsis. Some interesting points concerning the purity of the air in the operating room have been brought out by the author in the course of repeated observations. He found that after the room had been closed a certain length of time and no one had entered it, the number of bacterial colonies growing upon agar plates was very small; never more than five, and frequently none at all. When access to the room was permitted, and, in consequence, currents of air started, the colonies numbered upon an average, twenty. The day after disinfection of the room with formalin, no colonies developed, and if the door were kept closed, five to six days elapsed before the number of colonies indicated the usual number of microbes in the air. Depage has discarded the face mask formerly worn during operations, since finding that bacterial colonies upon agar were more numerous after speaking through a mask than without it. This he attributes to the lodgment upon the mask of the bacteria from the air, and their projection through respiration.

New Method of Excision of the Head of the Femur.—The various methods employed in excision of the head of the femur are rejected by F. PADULA (Policlin., Year X, fasc. 9, 1903), upon the ground that they either injure the muscular attachments or jeopardize the great vessels. A method has been devised by him which he thus describes: The anterior margin of the tensor vaginæ femoris is sought, and an incision along this line is made; thus bringing the operator down to the interstice which is bounded externally and posteriorly by the tensor vaginæ femoris and glutens minimus, and internally by the rectus femoris, psoas and iliacus. The capsule of the joint may then be readily reached by thrusting the finger through this interstice and pushing the muscles to either side. The neck and head of the femur are next exposed through a wide incision of the capsule; and after the bone is dislocated by extension and external rotation, the head is excised.

HISTOLOGY, PATHOLOGY AND BACTERIOLOGY.

Tuberculosis in the Turtle.—Spontaneous pulmonary tuberculosis in cold-blooded animals has heretofore never been observed. Lately, however, a well-marked case of tuberculous invasion was seen by F. F. FRIEDMAN (Deut. med. Woch., Jan. 8, 1903) in a specimen of large sea turtle (*Chelonia corticata*). Examination showed one lung dotted with miliary tubercles in great numbers. There were found also several cheesy nodules and a cavity about four by five cm., which did not communicate with any bronchus. Sections showed bacilli which presented all the characteristics in form and staining properties of Koch's bacilli. They permeated the entire lung, filling the alveoli and destroying in many places the epithelium of the bronchi. The leucocytes seen contained many bacilli, and numerous typical giant cells were seen.

Determination of "Purin" Bodies.—By "purins" are understood those substances which contain the radical C_5H_4, the chief of which in the urine are: hypoxanthine, xanthine, uric acid, guanine and the methylxanthines. They are exogenous if derived directly from ingested foods, and endogenous when resulting from the decomposition of the nuclein in the course of metabolic processes. The knowledge of the endogenous factor in

an individual and repeated estimations of the purins in the urine of twenty-four hours will enable one to regulate exactly the alimentary régime. This endogenous factor is determined by subtracting from the total purins, the figure representing the ingested food and obtained from published tables. For the determination of the total purins, J. WALKER HALL (Archives Générales de Médicine, November, 1902) uses two solutions. Solution No. 1 is:

Ludwig's double magnesia solution	100 c.c.
20 per cent. ammonia water	100 c.c.
Finely powdered talc	10 gm.

Solution No. 2 is:

Silver nitrate	1 gm.
28 per cent. ammonia water	100 c.c.
Powdered talc	5 gm.
Distilled water	100 c.c.

Remove any albumin from the twenty-four hours' urine, and in a graduated tube mix 20 c.c. of No. 1 with 90 c.c. of urine. The phosphates are thus precipitated. Then one adds 20 c.c. of No. 2, the precipitate from which contains chloride of silver and a silver combination of the purins. The silver chloride dissolves in the excess of ammonia, more ammonia being added if flocculi appear. At the end of an hour the purins are all precipitated, and easily distinguishable from the underlying phosphates by their yellow color, are read off on the graduated tube.

Etiology of Tuberculous Peritonitis.—Like many of the beliefs of our ancestors, the belief in the inheritance of tuberculosis has been scoffed at and denied. EDMUND CAUTLEY (Med. Press, Dec. 31, 1902), divides this much-mooted condition into the adhesive type; second, into the peritonitis with effusion of (*a*) serum, (*b*) pus; third, caseous or ulcerative peritonitis. Cast what doubts we may upon the value of inheritance, there is no getting round the fact that the child is the product of inheritance modified by environment. The disease reaches that child by being directly transmitted from the parent through the medium of an infected germ cell or maternal blood supply, or the child inherits a peculiarity or delicacy of structure which renders it liable to invasion. It is almost inconceivable that the microscopic spermatozoon can actually contain the bacillus even in the spore form and convey it to the ovum—much more probably the infection of a sperm cell would impair its nutrition and render it valueless for impregnation. Furthermore, it is highly doubtful that an infected ovum would be satisfactorily impregnated and developed. Maternal inheritance, however, stands etiologically on a different footing. For nine months of prenatal life the child's blood is the mother's. Truly this blood is filtered through the placenta, but even human filters may be imperfect, and supposing a tuberculous mother, why should the placenta remain free from infection any more than any other organ. This infection may be of so mild a character as not to produce abortion. Gärtner, by inoculating the mother intravenously, produced tuberculosis in young mice. Bacilli have been found in the human fetus, removed by Cesarean section from a tuberculous mother. Many infants show such advanced conditions of pulmonary tuberculosis at birth as to make fetal infection an almost necessary explanation. As to the identity of the human and bovine bacilli, many observers have succeeded in showing that human bacilli will produce tuberculous lesions in calves; and Koch's negative results are probably due to using too small doses of insufficient virulence. Milk is the diet of a child for the first year or more of life. There is no doubt that much milk is fed into infants' stomachs which contains great numbers of tubercle bacilli, yet the disease is a rare one. It is, however, much more prominent among the poor than the rich, although the former get less cow's milk. Autopsies show that 59 per cent. of tuberculous children have tuberculous mesenteric glands, and that 80 per cent. of these show ulceration of the bowels. From this it would seem that 47 per cent. of tuberculous children have this ulceration. In conclusion he urged that all forms of tuberculous peritonitis are probably not due to the same breed of bacillus. Both clinically and pathologically, there are good grounds for supposing that the bacillus varies in its effects, according as to whether it is bovine or human.

Tests for Albuminuria.—A few years ago a new method of detecting minute quantities of albumin in the urine was published by Pollacci. His reagent contained tartaric acid, 1 gm., mercuric chlorid, 5 gm., sodium chlorid, 10 gm., in 100 c.c. of water. To this is added 5 c.c. of formaldehyd. It was claimed that this reagent showed a sensitiveness of 1 to 370,000. A series of careful tests of the method have been made by G. LINDSAY and W. J. GIES (Am. Med., Jan. 31, 1903). They found that simple, compound and albuminoid proteids were all precipitated by this reagent. The test is too delicate for ordinary clinical purposes, since the normally occuring urinary proteids are precipitated. Nonproteid substances occurring in the urine in health and disease, are probably also precipitated by the mercuric chloride. The test has therefore no differential value and must be regarded as a general proteid precipitant rather than as an albumin detector.

The Pancreas in Venous Cirrhosis of the Liver.—In certain pathological processes the pancreas is united by close bonds with the liver. This is illustrated by a study of eight cases of venous cirrhosis of the liver, by M. KLIPPEL and E. LEFAS (Rev. de Méd., Jan. 10, 1903); in all of these cases a greater or less degree of pancreatic sclerosis was present. It is not yet definitely proved that this is an invariable association; but where pancreatic sclerosis is not readily found, it should be remembered that it may be present in some parts of the pancreas to the exclusion of others, and that negative findings prove nothing unless a large number of sections have been examined. In preparing a human pancreas for section, the processes of fixation and hardening ordinarily utilized in the treatment of other organs will not suffice. Formalin, Müller's fluid, or sublimate solutions will not arrest the autodigestion of the gland; powerful and rapid coagulants must be employed, and the best is 95-per-cent. alcohol, renewed frequently and used in liberal quantities, the glandular fragments being small. For imbedding, celloidin may be used, and in staining, good results will be obtained by means of hematoxylineosin or of thionin. During the autopsy it is necessary to place a fragment of pancreatic tissue in some acid or in Marchi's fluid in order to discover fatty degeneration. Histologically the pancreas may present in these cases a perilobular or intralobular hyperplasia of connective tissue; or the hyperplasia may be most marked surrounding the acini. The most frequent form of hyperplasia is the intralobular, the gland being divided by fibrous plaques into groups of from 10 to 20 acini. Associated with this marked intralobular growth is usually an increase of connective tissue surrounding the individual acini; interlobular changes may be present in addition to the other forms. While the initial sclerotic changes are probably located about the ducts, it is rare to discover marked degrees of connective tissue growth in these localities. The islands of Langerhans are more resistant than other parts of the pancreas, but they, too, may present a thickening of their trabeculæ. The cellular or parenchymatous lesions

which occur are: (1) Hypertrophy of acini, with enlargement of nuclei and enhanced staining reaction; (2) disorientation of cells within certain acini; (3) granular degeneration; (4) fatty degeneration. The changes in the pancreas do not follow a parallel course with those occurring in the liver and spleen. In most cases the sclerosis of the liver is more advanced, but this relation was in some cases reversed. In every case, the new-formed connective tissue in the pancreas is of the adult type, very poor in nuclei, while in the liver a younger type of connective tissue is not infrequently found. In most cases the term cirrhosis of the liver can be used with propriety, as referring to the most important pathological and clinical localization; however, the pancreas may be altered as much as or more than the liver in some cases, and the pancreatic lesions cannot be considered as the mere effect of the hepatic disease. In fact alcohol, the common cause of the disease under consideration, acts simultaneously on the liver, the spleen, the pancreas and the alimentary canal.

A New Differential Stain for the Bacillus Diphtheriæ.—After protracted use of Neisser's method of staining the diphtheria bacillus, bacteriologists agree that it is of limited value. In direct swabbing it is reliable in 60 per cent., and in cultures on blood serum or Kanthaks' agar of more than 24 hours' standing, it is not reliable. After experimenting for a stain of wider application, J. W. PECK (Lancet, Jan. 10, 1903), has offered the following to supply the need partly: The stain is Loeffler's methylene blue, and, as a counter-stain, Neisser's brown. The plate film is spread as usual, fixed in the flame, stained with Loeffler's methylene blue for three or four seconds, quickly washed, counterstained with .02 per cent. Vesuvius, aqueous, solution for 30 seconds. Again quickly washed, dried, and mounted in Canada balsam. The film may be treated on a slide and stained without the use of a cover glass. It is convenient to have two very wide-mouthed bottles filled with the stain, and simply dip the films into these bottles for the proper time. This technic gives a better result in all instances in which Neisser's acetic acid stain has been used, and it has this great advantage—that it is reliable for staining the Klebs-Loeffler bacillus from a culture on blood-serum several days old.

Organism of Dermatitis and Coccidioides.—In reporting a case of this rare disease, D. W. MONTGOMERY, H. A. L. RYFKOGEL and HOWARD MORROW (Jour. of Cut. Dis., Jan., 1903) described the organism as follows: In the tissues it is spherical, surrounded by a clear capsule of double contour, with its outer wall covered by spines, visible only in fresh specimens. The smaller capsules have clear or granular contents, and the larger are filled with endogenous spores. Some of the latter have a large, central clump of granules. The spores are circular, clearly defined, and highly refractive. No micropyle has been found in the capsule, as in coccidia, and no budding or mycelial forms in the tissues. Frequently, when stained with carbolfuchsin, the capsules resist decoloration with acid. Beside absence of budding, a great difference between this fungus and the blastomyces is the greater the size of the body, the greater the number in the tissues. It grows on all ordinary media, liquefies gelatine, is aerobic, and forms no gas on any of the sugars. In cultures of coccidia-like bodies it was found, as in the tissues, that no budding forms were observed.

Intravascular Antisepsis.—Historically the idea that drugs might advantageously be administered by direct injection was started by Sir Christopher Wrenn in 1656. J. M. FORTESQUE-BRINKDALE (Lancet, Jan. 10, 1903) has been carrying out a number of experiments on animals in the matter of intravascular injection of antiseptics, employing bichloride of mercury, oxycyanide of mercury, formic aldehyde, chinosol, a mixture of formic aldehyde and chinosol, and finally, taurogolate of sodium, as well as protargol. From these experiments, he offers the following suggestions. (1) That rabbits injected daily with non-toxic doses of oxycyanide of mercury, formic aldehyde and chinosol, protargol or taurogolate of sodium are not thereby protected from the usual effects of a previous inoculation of the virulent anthrax. (2) That chinosol and formic aldehyde in large doses (toxic) so depressed the rabbits infected with the pneumococcus that they died sooner than the untreated animals. Generally, then, it may be said that at present there is no experimental evidence which would warrant the assumption that the course of septicemia in animals may be influenced favorably by the intravenous injection of antiseptic substances, and that the only result to be obtained by the present stage of treatment beyond the maximum nontoxic dose is to hasten the death of the animal. In view of the results described in this paper and those obtained by informed investigators, it seems useless to continue trying to apply clinically a method which, while by no means free from special danger and difficulties, is at present unsupported by any experimental evidences either as to its present advantages or future prospects.

Streptothrix Pyemia.—An interesting case is reported by G. ENGLEHART and M. LÖHLEIN (Deut. Arch. f. klin. Med., Vol. 75, Nos. 1 and 2) of a general pyemia in a young man with fatal result. Autopsy showed localized abscesses in all internal organs. In the pus from these and also in the vessel-walls could be demonstrated a variety of micro-organism which was probably a streptothrix (actinomyces) but of unknown species and biological relations.

Iron in the Urine Under Physiological and Pathological Conditions.—Normally the urine contains iron to the extent of an average of .983 mg. per diem, according to A. NEUMANN and ARTHUR MAYER (Hoppe-Seyler's Zeitschr. f. Phys. Chemie, Dec. 20, 1902). In various pathological urines there was found a distinct increase in the iron-content. Thus the daily quantity in milligrams was determined in individual cases of disease as follows: Chronic interstitial nephritis, 1.091 and 1.605; typhoid fever, 1.290; facial erysipelas, 1.688; cholelithiasis, 1.233; hepatic cirrhosis, 2.092; biliary liver cirrhosis, 1.386; carcinoma of the liver and stomach, .997; and in a case of alcoholism, 8.015 and 6.428 a week later. The determinations in the cases of typhoid and erysipelas are in conformity with the law discovered by Salkowski that febrile urines contain an increased content in iron. The increase in the cases of hepatic disease is perhaps explained by the atrophy of the liver cells. Of great interest is the enormous elimination of iron in an individual who without any organic disease was accustomed to drink an extraordinary quantity of alcohol, and had an abundant paniculus adiposus. In cases of diabetes mellitus there is a great increase in the daily output of iron. Of greater interest is the fact that the quantity of iron is proportional to the quantity of sugar, 2½ mg. iron corresponding to every 100 g. sugar. In a case of diabetes complicated with carcinoma of the pancreas, there was a still greater increase in the iron-content. The authors believe that the discovery that the quantity of iron in the urine rises and falls with that of sugar, may be of value in the investigation of the source of urinary sugar. Some time ago Neumann observed that the thymus-nucleinic acid prepared by him contains an appreciable quantity of iron. Since the earlier investigations of Kossel and Neumann in the splitting of this acid revealed the presence of considerable quantities of carbohydrate through the dis-

covery of levulinic acid, it seems probable that in thymus-nucleinic acid is to be sought the source of the pathological production of sugar.

NEUROLOGY AND PSYCHIATRY.

Chorea Electrica.—The name "chorea electrica" has been used by three independent observers, namely, Dubini, Henoch and Bergeron, to describe a condition which is further elucidated by L. BRUNS (Berl. klin. Woch., Dec. 22, 1902). The condition in question is not related to Sydenham's chorea nor are the muscular contractions which are its characteristic feature the result of electric shock or stimulation. The name "chorea electrica" owes its invention to the fact that in the disease under consideration muscular contractions occur which resemble closely those produced by a strong faradic current. The cases of both Henoch and Bergeron occurred in nervous and anemic children between the ages of seven and fourteen. The parts commonly affected are the head, shoulders, neck and arms; rarely a single extremity is attacked or unilateral contractions take the place of the typical bilateral affection. Bergeron's cases were promptly cured; but Henoch describes the disease as an obstinate one. This difference of opinion is explained by Bruns on the score of etiological variations. Bruns, indeed, undertakes to classify cases of chorea electrica on pathogenetic grounds as respectively hysterical and epileptic; and he adds a third group of cases which may be regarded as chorea electrica proper. The latter closely resembles certain forms of convulsive tic, and it is entitled to distinct classification, according to Bruns, namely on account of the characteristic localization of the contractions, and because the cases reported are limited to certain years of childhood. From paramyoclonus multiplex Bruns professes to be able readily to distinguish chorea electrica; paramyoclonus may attack both sides of the body, but in typical cases the distribution is not symmetrical and the contractions are not synchronous; moreover, paramyoclonus may affect individual bundles of muscular tissue, or single muscles which are not subject to isolated voluntary contractions. In the epileptic variety of chorea electrica there is usually a history of classic epileptic paroxysms, with interparoxysmal attacks of muscular twitching with the characteristic distribution; or there may be, in addition to the latter symptom, only brief pauses in consciousness which require close watching for identification. The hysterical form of chorea electrica is very difficult to recognize, inasmuch as in this condition, as indeed in all forms of hysteria in children, the stigmata of hysteria may be lacking. But the prognostic importance of diagnosis is great, for while hysterical cases of chorea electrica yield to proper treatment, those which are nearly allied to convulsive tic are refractory. In all cases of chorea electrica it is important first to exclude epilepsy. That being done, every remaining case should be handled as one of hysteria, even if the diagnosis cannot be definitely established. Bruns recommends the removal of the child to a hospital, the practice of "intentional neglect" of the symptoms with the idea of convincing the child that its symptoms are of no particular consequence. While neglecting the convulsive attacks as such, the treatment should not disregard the patient; diet should be carefully studied, and hydrotherapy and electrotherapy may be employed.

Lumbar Puncture in Chronic Neuralgia, Secondary to Zona.—It is well known that intra-arachnoidean injections of cocaine have been used successfully in the treatment of certain painful diseases of the nerves, for example, of chronic lumbago, zona and sciatic neuralgia, but during his researches into the lymphoctosis of the spinal canal, J. ABADIE, of Bordeaux (La Sem. Méd., Dec. 31, 1902), has been convinced that in these attacks of zoster, simple lumbar puncture with evacuation of a few cubic centimeters of spinal fluid is just as efficacious as cocainization itself. In a young woman afflicted with scapural humeral zona, in the hospital during the service of Prof. Peteus, Abadie did not, for particular reasons, inject the cocaine, but satisfied himself by withdrawing about 20 c.c. of the spinal fluid. During the following days he was hardly surprised to see the eruption rapidly decrease, and the pain moderate at the same time. Since then this observer has had occasion to treat in the same manner two other cases of neuralgia accompanying zoster, which showed itself respectively at five and six months. In each of these examples of the disease, simple evacuation of a small quantity of the subarachnoidal fluid, of 17 c.c. in the first, and of 25 c.c. in the second, was sufficient to cause complete disappearance of the pain. Evidently these three patients presented hypertension of the cerebrospinal fluid, as the quantity of fluid which he drew off by puncture was about enough to make the pressure return to normal.

PEDIATRICS.

Administration of Heroin in Children.—Belladonna and kindred drugs have for years been the sheet anchor in conditions in children requiring an antispasmodic, sedative or analgesic. Based on his own experiences, N. G. PRICE (Phil. Med. Jour., Feb. 14, 1903) finds that they are uncertain, often cause alarming toxic symptoms, bring on a disagreeable parching of the mouth, induce constipation and disorder digestion. He recommends the use of heroin hydrochloride as a substitute and gives it in doses of $^1/_{200}$ gr. to a child of one year. It is non-irritating and possesses antispasmodic properties more potent than the belladonna group or the bromides. The only untoward symptom has been vertigo of a transitory character. It is a sedative to all mucous membranes, particularly to those of the respiratory and genito-urinary tracts. It diminishes peristaltic hyperactivity and hypersecretion of the intestine. The drug is also rapidly absorbed from the rectum and can be so given in double dosage than by mouth. Complete oxidation takes place in the system and no cumulative action results. Heroin is not adapted for mixtures or for hypodermic use because of its insolubility. The hydrochloride is preferable, is soluble and readily absorbed, is compatible with the expectorants and the other antispasmodic, analgesic and sedative remedies.

Interstitial Pneumonia.—The so-called interstitial pneumonia, or, as he prefers to call it, pulmonary hyperplasia with secondary cirrhosis, is, according to A. JACOBI (Arch. of Ped., Jan., 1903), a frequent and frequently independent disease. The majority of writers have considered it rare, secondary, and of importance as a permanent and progressive lesion. The diagnosis at first is difficult, but must be suspected when recovery from what we have thought an ordinary pneumonia is incomplete or much retarded, or when a child has a number of attacks of pneumonia. Independent interstitial pneumonia is mostly in an upper lobe, pleuritis mostly over a lower. The presence of serum or pus makes the diagnosis of pleuritis easy, but deformity of the chest may result from either condition. In tuberculosis there are few cases with a marked lesion at one apex without some signs at the other, and in children tuberculosis is most likely to involve all the lobes. It is also accompanied by cough and expectoration. In interstitial pneumonia there may be neither. Percussion elicits dulness and resistance to the percussing finger. Induration of the lower lobe may raise the liver dulness

higher than normal. Secondary emphysema and the cavities of fibroid phthisis yield their well-known physical signs. On ausculation of the pneumonic area the respiration in the young is vesicular and strongly puerile; with bronchitis there may be râles. After a while the respiration becomes bronchial, feeble, and continues so to the end. In many cases there is interrupted inspiration. The heart may be drawn up or to one side, or may be exposed to percussion by the retraction of the lung. In acute cases there may be high fever persisting for weeks, but in most cases the fever does not last. When the induration is fully established there is no temperature. Deformities of the chest are frequent, because most of the patients are young with yielding ribs. In serious cases the circumference of the diseased side is diminished. These cases described by the author do well and live many years. They are to be distinguished from the complicated type mostly spoken of, by writers, in which there is frequent and harassing cough, and copious sanguineous or fetid expectoration. Most text-books describe only adult cases with their unfavorable prognosis, but the vast majority of cases begin and end in childhood, and this is the time for preventive measures. Good food, fresh air, and the frequent application of cold water to the skin of the growing child are the best preventives of colds. Puny, undersized children should have animal food and cereals as well as milk. Arsenous acid, one milligram (gr. $^1/_{60}$) may be given after meals for months; phosphorus in doses of ten drops of the official elixir three times a day may be given to a year old baby for three months. Children of five or six years may need mercury or iodide of iron; quinine is unsatisfactory. When the heart muscle is feeble, the equivalent of a grain of digitalis daily in small doses for months will improve the condition of a year old child. In the acute cases, remember that recent cell proliferation and recently formed connective tissue are absorbable, therefore give iodine or iodide. Bathing at 90° to 95° F. has a good effect. In some young, in many adults, the further development may be into emphysema, asthma, bronchiectasis, caseous degeneration, abscess, gangrene, cavities and death.

EYE, EAR, NOSE, AND THROAT.

Intracranial Complications of Septic Osteitis.—Pachymeningitis externa is the first and least important complication of septic ear disease, according to F. EVE (Lancet, Jan. 17, 1903). The extrapurule abscess is, however, more common, especially over the sigmoid sinus, and more severe. Its treatment requires mastoidectomy, the pus being reached by enlarging the abscess in the bone backward along the base line for low or upward for high-seated pus. Thrombosis of the lateral sinus is one of the fatal complications and requires the foregoing treatment also. Septic leptomeningitis is a very serious secondary condition. Serous meningitis is less common. Then follow posteriorly nasal meningitis, and, as another rare result, the cerebellar abscess belongs to the late complications as postcerebellar abscess. The inflammation of the meninges requires the well-known medical management, while abscess of the brain, either the fore or hind brain, demand surgical interference, consisting chiefly in evacuating through the shortest and safest possible route.

Electricity in Deafness.—The use of electrolysis in Eustachian salpingitis with stricture is commented on by E. MATLACK (Am. Med., Feb. 7, 1903) who reports a series of 75 cases treated by this means. These include all cases of deafness applying for treatment and were not selected. The autophonia and tinnitus in all cases were cured, limit of tone perception increased, and the general hearing improved, results due the author believes to the permanent opening of the Eustachian tube. A galvanic current was used, from one to five milliampères, the positive sponge being held in the hand and the negative passed through an insulated Eustachian catheter of about 35 mm. into the middle-ear cavity. Treatments lasted about one minute each, and successive bougies are passed until the tube reaches its normal caliber. Excluding purely labyrinthine conditions, the treatment has been of service in all other forms of deafness. Supplementary measures should also be done and septum irregularities and hypertrophied turbinals attended to. After the normal caliber of the tube has been restored by electrolysis, a further use of middle-ear vaporization will be found of value.

OBSTETRICS AND GYNECOLOGY.

Chorion Epithelioma (Deciduoma Malignum).—This is a rare but rather fatal disease, unless its presence is made out early by the practitioner. The following conclusions as to the nature of the growth are offered by D. KREWER (Zeitschr. f. Gerburtsh. u. Gyn., 1902, B. 48, H. I.) This epithelioma of the chorion belongs directly to the malignant type of tumors, and is comprised of the overgrowth of epithelium from the chorionic tufts. It is composed of two varieties of cells which are physiologically connected with these villi, and gather in the tumor around the walls of blood vessels, which appears to be an explanation for the enormous bleeding which is present in this disease. The relation of the two varieties of cells in the tumor is analogous to that which is found in the normal chorionic villi. Metastases appear to occur by way of the blood current. Oncologically, the tumor belongs to the class of carcinoma.

Extraction in Narrow Pelves.—Disproportion between the size of the child and the birth canal, especially the bony canal, constitutes one of the greatest difficulties which confronts the obstetrician. Dr. KULL (Arch. f. Gyn., 1902, B. 76, H. 2) makes the following conclusions as to treatment. He first recommends the intra-uterine rubber bag or balloon as a means of dilating the os, claiming for it the following essential conditions. The child's head must be mobile. The os must admit two fingers to permit the introduction of the bag. The bag stimulates the pains, indeed, excites them when they are absent, thereby differing from the kolpeurynter. It serves well for a rapid dilatation of the narrow os, is a good substitute for the bag of waters, especially when this has ruptured prematurely, acting in the same way as the natural bag to stimulate the pains. It is of great value in multipara. It should be used instead of the kolpeurynter, when this fails. It is serviceable as a tampon in placenta previa. For a complete dilatation of the os, the rubber bag must contain about one pint of fluid. The most serviceable form has a rubber tube attached, which makes it possible to exert considerable traction upon it. As to the rest of the treatment, it consists of (1) version and extraction in narrow pelves, with children of moderate size, may be carried out successfully for mother and child, in flat and flat rachitic pelves, when the conjugate diameter is 9 cm., and in uniformly contracted pelves, when the same diameter is 9½ cm.; (2) if the woman is a primipara, version should be postponed to the last moment and altogether avoided, except in the presence of insurmountable indications from both mother and child; (3) for primipara, conservative treatment is best. In multipara, with narrow pelves, which approach the measurements indicative of version, if the head lies well, conservative treatment is advisable; (4) in multipara with narrow pelves and a good engagement of the head, version with extraction is a valuable means

of interference, provided the practitioner is skilful. (5) Version and extraction in narrow pelves is limited to those cases where, from the standpoint of the mother, Cesarean section and symphysiotomy would have only relative indications.

THERAPEUTICS.

"Esanofele Bileris" in Malaria.—The effect of this preparation—a compound in pill form, of quinine, arsenic and iron with bitter extracts—upon malaria, has been carefully studied by J. F. BENITEZ and G. COCCHI (Rev. Méd. Cubana, Jan. 15, 1903) in twenty cases; and the results obtained coincide with the favorable effects reported from its use in Italy and elsewhere. Malaria in any form was found to yield to its influence within a few days, and always less than a week; six pills daily sufficing to break up the most obstinate attack, even when quinine alone had failed. It is said to be devoid of the undesirable effects of quinine; a slight tinnitus alone occurring in one patient out of the twenty. In those pernicious cases in which rapid absorption is essential, injections of quinine hydrochlorate might, in the authors' opinion, be advantageously supplemented by the use of esanofele.

Treatment of Metatarsalgia with Electricity.—The condition known as metatarsalgia or Morton's disease, which, according to the description given by Morton, is characterized by intense, continuous or periodical pain in the metatarsal region, sometimes involving the whole foot, calf of the leg and knee, but always having its point of greatest intensity over the head of the fourth and sometimes the third metatarsal bone, has, in the majority of cases, proven most rebellious to treatment. F. PICCININO (Ann. Elet. Med. e Ter. Fis., Dec., 1902) has effected a cure with the galvanic current in such a case, of seven years' standing, in which all other remedies had failed. One electrode, connected with the negative pole, was placed over the anterior inferior third of the thigh; the foot was then placed in a vessel containing tepid water and the positive pole introduced in it. A continuous current of fifteen milliampères was then used for ten minutes; and the relief experienced by the patient was sufficient to enable him to walk with much greater ease, and procure him a restful night. The following day the intensity of the current was increased to twenty milliampères, and treatment was prolonged to fifteen minutes. This was continued for five days, during which improvement was constant; and at the end of that time, pain disappeared entirely at night, and was much lessened during the day; though increased by walking. On the following two days, injections of one-half of a cubic centimeter of two-per-cent. cocaine hydrochlorate were given, as advised by Verger; galvanization being continued as before. Complete relief of the pain was effected, and after a lapse of two months, there has been no return.

Local Treatment of Syphilitic Lesions.—Certain syphilitic lesions, for example, those developing about the eye, tongue or face, may be especially painful or dangerous. The experience of CH. BOUCHARD (La Presse Méd., Dec. 31, 1902) leads him to believe that such lesions can be promptly arrested or rapidly reduced by local treatment, which he proposes, not as a substitute for, but as an aid to constitutional treatment. In one instance a man suffering from ulcerated gumma of the side had been treated for a long time without success by mercury and potassium iodide, separately and together. Inunctions had been practised in the usual localities, which were distant from the ulcerated lesion. Subcutaneous injection of mercurial salts had also been tried without success. Bouchard abandoned general treatment of this case, and began instead of injections about the gumma itself, beginning with one c.c. of iodide of potassium, and following this with double quantity. After seven injections the treatment was stopped, as the gumma had cicatrized. In a second case where constitutional treatment failed, cicatrization of a large gumma was obtained after three injections of six cgm. of KI. Another case which yielded to local treatment of the same character was one in which neuritis associated with trophic ulcer was attributed to syphilis. The signs of neuritis disappeared and the ulcer was healed. Again, a woman suffering from a grave attack of syphilis presented deeply ulcerated condylomata on various parts of the body. After a month of mixed treatment absolute intolerance set in; the stomach would no longer endure the iodide of potassium, and large swellings were caused by the injection of benzoate or iodide of mercury. General treatment was discontinued and potassium iodide and the biniodide of mercury were injected locally. In three days a condyloma was cured after the injection into its base of 2/10 mg. of biniodide of mercury. Another ulceration yielded after six injections of the same dose.

Calcium Hydrate in Diabetes.—Working upon the basis of the well-known inhibitory influence of alkalies upon the saccharifying power of those body-fluids by which starch is converted to sugar, A. CAPPARELLI (Arch. Ital. Biol., Vol. XXVIII, fasc. II, 1902) has studied the effect of the earthy alkalies upon starch and has successfully applied the principles deduced from the work to diabetes mellitus. In repeated tests, he found that if a small amount of lime-water, sufficient to give a slight alkaline reaction, were added to starch paste, it might be mixed with saliva or pancreatic juice, and allowed to stand a prolonged time, without the usual transformation of cooked starch into glucose taking place. The author brought about a gradual reduction and final disappearance of all diabetic symptoms, including elimination of glucose by the urine, in several diabetic cases occurring in his personal practice, through administration of lime-water in large quantities before and after meals. Two cases are reported in detail, which were so treated under hospital supervision; a diet of meat, bread, bouillon with rice, wine and milk being allowed daily, and 300 c.c. of lime-water given during the course of each day. This treatment was continued for a month; the lime-water being gradually reduced to 200 c.c. At the end of that time, sugar was reduced to one-half in one case, and to a minimum in the other; the amount of urine eliminated being proportionately decreased. The mechanism of the action of calcium, the author believes, may depend upon the neutralization of fluids acting upon starch; as in previous work, he found the normal reaction of saliva to be acid; the acidity being chiefly due to lactic acid. He also holds it probable that the reaction of the pancreatic juice is acid in the body as it is outside of it; for, while it mingles with the alkaline bile in the duodenum, the activity of the chyme is probably too great to be overcome by the alkalinity of the former. The influence of calcium in diabetes may also, in the author's opnion, be allied to its known power to precipitate starch paste from its solution, as it is acknowledged that chemical action and reaction take place solely in dissolved substances, and not in those which are precipitated. From the work done, Capparelli concludes that lime-water is not only curative when administered to diabetics in sufficient quantities, but permits the addition of starchy food to the diet.

Morphine in Uremic Convulsions.—The use of hypodermic injections of morphine in this condition was recommended by A. L. Loomis many years ago, especially in the uremia of acute nephritis. The importance of the subject has led the editor of the Therapeutic Gazette to obtain expressions of opinion from

leading medical men, which are published in the form of a symposium (Jan. 15, 1903). JAMES TYSON believes that only cases of uremia from acute parenchymatous nephritis, whether due to pregnancy or other causes, are thus benefited. In uremia due to chronic interstitial nephritis, however, morphine in any form is harmful, deepening the coma and making relief more difficult. As the diagnosis may be difficult, especially when suddenly called to a case, he is cautious in giving morphine. He believes that in parenchymatous nephritis, a larger number of cells are capable of eliminating and therefore the dangers of the drug are diminished. W. H. White, of London, rarely uses it, preferring to give chloroform if the convulsions are severe. William Ewart, London, would give morphine if chloroform could not immediately be resorted to. The urgent danger being a continuance of the convulsions, that agent which will check them most effectually is for the moment the best remedy. Even if chloroform had been administered and permanent relief had not resulted, he would supplement its action by a small dose of morphine. It has no curative value and should not be substituted for active eliminative measures. Frank Billings, of Chicago, thinks it is of value in uremia in small doses as a cardiovascular tonic, where there is dilatation of the heart with vasomotor stasis and a tendency to pulmonary edema. Large doses defeat its purpose, and if used where the cardiovascular tone is good it may lessen the same and be harmful. John H. Musser is undecided regarding this procedure. The drug is of value in relieving the restlessness often found aften convulsions. He has had good results in uremic asthma. James M. Anders believes that it is of great value in uremia from acute nephritis and has seldom observed untoward after-effects. He does advise a repetition of the effective dose (gr. ¼ to ½) but relies on other measures. In all other uremic manifestations morphine should be withheld since it favors the development of uremic poisoning.

Salicylate of Sodium in Glaucoma.—This remedy is advocated by H. GIFFORD (Ophthalmic Record. Dec., 1902). He gives one grain of the salicylate for each pound of body-weight during the waking hours, 7 A.M. to 10 P.M. The main difficulty is in the tendency to collapse and gastric disturbance, which he obviates by making the patient go to bed after the third or fourth dose, the doses being given an hour to 1½ hour apart, dissolved in four parts of brandy. He allows the patient to go without the drug every third or fourth day, and requires the head to be wiped dry when perspiring. Each dose of salicylate and brandy is given in one eighth of a glass of water. Most important of all drugs in non-specific inflammations of the iris, ciliary body, sclera and episcleral tissue, acute glaucoma, sympathetic ophthalmia, interstitial keratitis and herpes of the cornea. By studying the elimination through the urine he determined that at no time was the amount of salicylate present in the blood stronger than 1 to 52,529. A strength of 1 to 1,000 to 1 to 500 is needed to be germicidal. He accepts Oltramare's theory that local depletion is produced by general capillary dilatation, which may check bacterial growth.

The Influence of Modern Drugs in Gout.—There is no nation better qualified than the English to write positively on this important question of metabolic disorder. WILLIAM BAIN (Brit. Med. Jour., Jan. 31, 1903) reaches the following conclusions after a review of extensive investigations: (1) There is an increase in albumin coincident with the development of a subacute attack of gout; (2) a preponderance of serum globulin over serum albumin is observed; (3) there were present in blood the peculiar leucocytes described by Chalmers Watson; (4) lithium benzoate and urotropin were ineffective as regards uric acid excretions; (5) tartrate of piperidin, lysidin, and sidonal in the order named showed an increasingly augmentive effect on the uric acid excretions; (6) the excretion of uric acid was diminished during the administration of colchisal and the conjugated sulphates increase; (7) the solvent action of tetra-ethyl ammonium hydrate on sodium bi-urate probably depends upon its alkalinity. This last observation is of great interest, because curiously enough, the patient was of the opinion that he derived greater benefit from colchisal than from any of the other drugs.

Treatment of Rheumatoid Arthritis.—Many observers have claimed that this disease is practically incurable. Some have taken a more hopeful view and F. B. BISHOP (Jour. of Adv. Therap., Feb., 1903) believes that much can be done even in advanced cases with diet and electricity. He recommends a liberal diet including beef or mutton, very little bread, milk, eggs, and water in abundance. Static electricity is applied as sparks to the joints or to the nerves, and also as currents and sparks to the spine. If there is effusion in the joints the galvanic current may be applied at intervals to the boggy surface so as to produce a blister. The extensor muscles are treated by the interrupted galvanic or interrupted induced current by placing the patient's hands and wrists in a water bath connected with the negative pole of the battery, the other pole being connected with a large dispersing pad over the spine. Mild hepatic stimulants may be given and for gastric acidity bicarbonate of soda in hot water before meals. By the judicious use of electricity in conjunction with dietetics the local nutritive function of joints, skin and muscles is increased, and also that of the organs of secretion and excretion. He believes that the cause in most cases is abnormal metabolism and that a rheumatic or trophic nerve center disturbance is not an etiological factor.

Screen for X-ray Work.—To obviate the use of sheet-lead covers for protecting the patient during the application of the rays, G. E. PFAHLER (Phil. Med. Jour., Feb. 14, 1903) recommends the employment of an adjustable screen which he has constructed as follows: The head clamp is removed from an ordinary photographic headrest and the thumbscrew is attached to a circular board 18 inches in diameter which is covered with sheet lead. An opening is made in the center, five inches in diameter, over which a series of diaphragms can be fitted. When this is placed near the tube practically all the divergent rays are cut off and the light reaches the part to be treated in the form of a cone which may be regulated by the various diaphragms and the relative positions of tube and screen. The screen can be used in both vertical and horizontal positions and also serves as an electrical conductor.

Perirenal Fatty Tissue.—A note on the anatomic disposition of the perirenal fat, which apparently has not heretofore been described, is made by W. W. KEEN (Amer. Med., Jan. 31, 1903). He believes that its recognition greatly facilitates the finding of the kidney. Two distinct layers of fatty tissue surround the kidney: (1) that which should be called the transversalis layer of fat, and (2) the fatty envelope surrounding the organ itself. In operating, as soon as the fat bulges through the incision, if it is carefully cut through, a distinct interval between these two layers will be found which contains connective tissue. Under this is the second layer of fat and when it is torn through, the opening thus made becomes an infundibulum at the bottom of which the kidney is invariably found.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS in the form of Scientific Articles, Clinical Memoranda, Correspondence or News Items of interest to the profession are invited from all parts of the world. Reprints to the number of 250 of original articles contributed exclusively to the MEDICAL NEWS will be furnished without charge if the request therefor accompanies the manuscript. When necessary to elucidate the text illustrations will be engraved from drawings or photographs furnished by the author. Manuscript should be typewritten.

SMITH ELY JELLIFFE, A.M., M.D., Ph.D., Editor,
No. 111 FIFTH AVENUE, NEW YORK.

Subscription Price, including postage in U. S. and Canada.

PER ANNUM IN ADVANCE	$4.00
SINGLE COPIES	.10
WITH THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES, PER ANNUM . .	8.00

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

LEA BROTHERS & CO.,
No. 111 FIFTH AVENUE (corner of 18th St.), NEW YORK.

SATURDAY, MARCH 14, 1903.

THE PROPOSED NEW BELLEVUE HOSPITAL.

THERE was wisdom in the legislation which separated the public hospitals of Manhattan and the Bronx from the Department of Charities and vested the control of these hospitals in a separate board of trustees. Bellevue Hospital and the sick poor, for whose welfare it stands, have found vigorous champions in the new Board of Trustees under the presidency of Dr. Brannan. As a consequence of the aggressive policy of the new board, which has the confidence of the present municipal administration and of the people of the city, the new and better Bellevue Hospital, for which the NEWS and the medical profession of New York have so often pleaded, will soon replace the present inadequate structure. On February 26 the Board of Estimate authorized the erection of new hospital buildings at a cost of $3,000,000.

The new hospital is urgently needed; and yet, if the trustees and the architect would follow the lesson of experience, they will proceed with great deliberation before adopting any scheme of construction. A hospital should be built with special regard for the service for which it is intended, and the first duty of the architect is to consult those to whom this service, in all of its aspects, is an open book. So far as Bellevue is concerned, the needs of the future should be taken into account along with the demands of the present. The growth of the city inevitably will be accompanied by increasing demand for accommodations for the sick poor, and the East River site at Twenty-sixth street is an asset which should not be expended with too free a hand. If part of this site can be held in reserve for future needs so much the better. We are aware that to those whose ideal is the one-story pavilion the site will seem ridiculously small for a hospital of say 1,000 beds. But the pavilion hospital, with its pleasant gardens and its widely separated wards, is scarcely to be thought of on Manhattan Island; nor is it the only scheme of hospital construction which can provide safety and comfort for the patient and which can satisfy all the demands of sanitary science.

Hospital construction in New York City has often suffered because lay directors have ignored medical and administrative officers. We feel assured that the new Bellevue will not suffer for any such reason, since the President of the Board of Trustees is himself a medical man of liberal mind who has long been a student of hospital problems. Hospital architects are prone to attempt the impossible, having to deal on the one hand with a limited building fund, and on the other, with the demand for a definite number of beds. In the case of the new Bellevue the first thing to be considered is substantial and suitable hospital construction; and the available appropriation should be expended with due regard for right standards. Should it prove insufficient for the number of beds needed, it will be the duty of the city to provide additional funds.

The Hospital of the New York Lying-in Society, which represents the highest type of hospital construction yet attained in this city (with the possible exception of St. Bartholomew's Clinic, which is too small for comparison), cost $1,250,000, and contains about 2,250,000 cubic feet. The new Mt. Sinai Hospital, which is now nearing completion, contains about 5,000,000 cubic feet, with a normal capacity of nearly five hundred beds; it is estimated to cost nearly $4,000 per bed, but this cost includes an expensive pavilion for private patients, a nurses' home, a laboratory for pathological research and a dispensary building. Allowing for the different conditions at Bellevue, the available appropriation, under similar market conditions, will probably suffice for a modern hospital of one thousand beds.

We hope that the architects selected by the trustees of the city hospitals will not only be careful in making their plans, but that they will possess the liberality and the public spirit to expose their plans to honest criticism before the final adoption. The new Bellevue will be a great center of clinical instruction; let it be also the crowning glory of American hospital architecture.

LAVAGE OF THE STOMACH.

THE ease with which a stomach-tube can be introduced and the immediate relief which follows a single washing after real suffering has resulted in the indiscriminate employment of lavage in almost every form of gastric derangement. But the results have not been uniformly good, and the pendulum is swinging in the other direction and condemnation is taking the place of the former enthusiasm. Thus do we abandon some of our valuable therapeutic measures on account of untimely abuse and their failure to prove universal panaceas.

In a study of its physiological action, G. Linossier (*Archives Générales de Médicine,* Jan. 6, 1903) finds that lavage is detersive, emptying and cleansing the stomach, that it stimulates the musculature of the stomach, esophagus and diaphragm, that it acts reflexly on other organs, has a mechanical and psychical influence, and may be employed for the application of remedies directly to the gastric mucous membrane. Its first effect on muscular activity is shown in a tendency to vomiting, but aside from this the tube stimulates peristalsis, and, in fact, the simple extraction of a test meal without lavage may excite a sluggish stomach to completely empty itself through the pylorus. The temperature of the lavage water makes a difference, cool water (indicated in asthenia) tending to stimulate, and hot water (used in pyloric spasm) acting as a sedative and antispasmodic. Reflexly it may stimulate peristalsis in the large intestine with relief of constipation.

In suggestive therapeutics lavage is a wonderful agent, the very trouble of the first introduction impressing upon the patient that it is an energetic and efficacious method of treatment. In the topical application of remedies, lavage permits the drug, for example, silver nitrate, to be brought into contact with all parts of the mucous membrane, and then allows its removal, to prevent absorption. Hayem notes the exciting action of one-half per cent. solution of sodium bicarbonate and of two per cent. sodium sulphate, the depressant effect of 1-1000 silver nitrate, and the irritation, even resulting in hemorrhage, of a two per cent. solution of borax.

The contraindications are mainly those from which harm may come from a strong reaction to the introduction of the tube. Hemorrhage, rupture of an aneurism, and perforation of an ulcer are due to violent contractions and not to mechanical injury from the tube. The first washing is often followed by fatigue, and in the brusque evacuation of a much-distended stomach collapse has been induced. Lavage should be employed as little as possible, for if much food and gastric juice are removed it may enfeeble the organism. Its prolonged use, too, increases muscular asthenia, and may cause a gastritis. Moreover, if the gastric secretion is highly acid, removal of mucus may expose an inflamed mucous membrane to the irritating action of the acid.

Among the indications for lavage the removal of poisons is the most obvious, but it should not be employed for caustic acids or alkalies, for these can be chemically neutralized without removal, and may have so damaged the stomach as to render the introduction of the tube dangerous. The most general indication is alimentary stasis, in which, by the removal of fermenting, gas-producing material, abnormal food-destruction and auto-intoxication are prevented and the overdistended organ is allowed to contract and regain its muscular tone. Mere atony or pyloric spasm may be completely cured by lavage, but, of course, an organic stenosis of the pylorus is affected only secondarily, viz.: by the improvement of the muscular tone and the diminution of pyloric irritability. The course of a cancer per se is not influenced. With tendency to hemorrhage from a cancer or in ulcer lavage should be omitted, unless the bleeding or the tendency to perforation is increased by distention, excessive peristalsis or prolonged vomiting. Then the removal of irritating putrefactive material and blood clots is the only way of securing rest for the viscus (Ewald, Matthieu, Bourget, and others).

In mucous catarrh a morning lavage with alkaline water may be of benefit, but is generally not necessary. Biliousness, with headache, malaise, dizziness, nausea, etc., may be speedily relieved by thorough washing. The mechanical and psychical effects are most noticeable in the nervous dyspepsias, nervous vomiting, derangements of appetite and gastralgia.

Lavage in children is considered useless by Comby, and dangerous by Baginsky, Scherich, Lesage, and Marfan, but Epstein favors its use in choleraic disorders, and reports one thousand cases without any mishap. In acute and chronic gastro-intestinal troubles, the summer diarrheas, it certainly may be a valuable adjunct to rectal irrigation.

Lavage, then, is not adapted for universal application in stomach disease, but has definite uses and limitations.

ECHOES AND NEWS.

NEW YORK.

Glanders in New York.—It appears that a large number of cases of this disease is reported by experts from the Department of Agriculture. The condition is sufficiently grave to warrant rigid investigation.

Psychiatrical Society of New York.—A society with this name has recently been organized. Its object is to promote the interests of psychiatry and to stimulate its study. Active membership is limited to fifteen. The meetings, which are held on the first Wednesdays of November, January, March, and May, are at the houses of members. Officers, Dr. Allan McLane Hamilton, President; Dr. Frederick Peterson, Vice-President; and Dr. Pearce Bailey, Secretary.

Columbus Hospital.—Dr. G. A. DeSantos Saxe has been appointed Assistant Pathologist to this hospital. The institution is to be enlarged shortly by the addition of new buildings, the ground for which adjoining the present property has already been purchased. The erection of these new buildings will increase the capacity of the hospital to 150 beds, instead of the present 98 beds. Funds for the erection of the buildings are available, which will be sufficient to provide for a modern equipment of the new wards.

Dr. Mylan Called to Columbia's Gymnasium.—Dr. George L. Mylan, medical director of the Boston Young Men's Christian Association gymnasium, has been elected adjunct professor of physical education and medical director at Columbia University, and will enter upon his new duties next fall. Dr. Mylan is a graduate of the Lawrence scientific school at Harvard, has taken research courses in the Harvard graduates' school and was graduated from the New York University medical school.

State Examinations.—The Secretary of the State Board of Medical Examiners representing the Medical Society of the State of New York, reports as follows regarding the January, 1903, State medical licensing examinations: Total number of candidates, 103; successful, 75, or 72.8 per cent.; unsuccessful, 28, or 27.1 per cent. Of this number eight had previously passed in the medical primary branches. There was but one "honor" licentiate. Fifty-one candidates appeared for certificates of proficiency in the medical primary branches (Anatomy, Physiology and Hygiene, Chemistry) Forty-seven, or 92.1 per cent., of these were successful.

A Useful Prophylactic Slip.—The New York Pharmacal Company of Yonkers has recently issued to physicians in the shape of a series of blanks the following on infectious and contagious diseases. Precautions to be observed by patient, family and attendants.

General Information.—In smallpox, chicken-pox, scarlet fever, measles, German measles and erysipelas the *scabs and scales* are infectious.

In diphtheria, scarlet fever, measles, whooping cough, tuberculosis, typhoid and typhus fever and pneumonia, the *sputum* is infectious.

In typhoid fever, Asiatic cholera and yellow fever, *the discharges from the bowels, urine* and *vomited matter* are infectious.

Remember.—A *mild* form of any of these diseases may give rise to a *severe* form in another person; "scarlatina" and "scarlet rash" are the same as scarlet fever.

Duration of Quarantine.—Smallpox, chicken-pox, scarlet fever, measles, German measles and erysipelas until every scab or scale has fallen off. Diphtheria until throat and nose are free from the germs of the disease as determined by bacteriological examination. Typhoid, typhus and yellow fever and cholera until one week after termination of fever.

During Quarantine Period.—(1.) The sick room should be isolated (if possible at top of house), sunny, freely ventilated and maintained at an equable temperature. (2.) All unnecessary furniture, curtains, hangings or draperies should be removed. (3.) All bed linen, garments, towels, handkerchiefs, etc., worn or used by patient should be immersed in carbolic solution five per cent. for one hour and subsequently boiled, aired and sun-dried. (4.) Dishes, cups, glasses, trays, eating utensils, etc., should be similarly immersed and boiled. Remains of food should be burned. (5.) All discharges from nose, throat, eyes or ears (especially in diphtheria and tuberculosis) should be received in corrosive sublimate solution, 1-1000, and stand for one hour before throwing out. (6.) In typhoid, typhus and yellow fever and Asiatic cholera, the urine, evacuations from the bowels and vomited matter should be similarly received, thoroughly mixed and allowed to stand one hour before throwing out. Wash water closet (seat, pan and pipes) with five per cent. carbolic solution once a day. (7.) All exposed persons, including nurse, should gargle throat frequently with an efficient but non-poisonous germicide. (8.) During the peeling stage of scarlet fever, the patient's skin should be bathed each day with a mild germicidal solution and anointed with a bland antiseptic oil to prevent flying of scales. (9.) The nurse should wear only washable garments, short skirts and overshoes. (10.) In hallway should be soap, water, nail brush, carbolic solution, 2½ per cent. for hands, and antiseptic solution for gargle; here also should be kept gown, overshoes and hood for use of those compelled to enter or leave the sick room. (11.) All persons exposed to smallpox should be immediately vaccinated. (12.) The advisability of administering a protective dose of antitoxin to persons exposed to diphtheria should be determined by the physician.

After Quarantine Period.—(1.) Burn all toys, books or valueless articles used by patient. (2.) Patient sponges off with an efficient but non-irritant antiseptic solution. (3.) Receives soap and warm water bath and shampoo. (4.) Again washes and shampoos with antiseptic solution; ears and finger nails also. (5.) Gargles with antiseptic solution. (6.) Dresses in clean clothes. (7.) After arranging room for disinfection by removing outer garments, furs and leather, and sealing all apertures and crevices, nurse follows same course. (8.) All exposed persons should take disinfecting bath and shampoo and use antiseptic gargle. (9.) Instructions for fumigation and disinfection of apartments should be obtained from health authorities.

This is useful, commendable and ethical advertising.

PHILADELPHIA.

Typhoid Still Epidemic.—Typhoid fever is still prevalent to an unusual degree, there being 254 and

255 new cases for the last two weeks respectively. One-fourth of these cases were in the four wards where the water supply is furnished by direct pumps.

Women Physicians Are Successful.—It is stated that a number of Philadelphia's 186 women physicians have an annual income of $10,000 each. A large part of the entire number average between $2,000 and $3,000 yearly.

Homeopaths Ask for Institution.—For several years past the homeopathic physicians of the city have unsuccessfully asked for representation upon the boards of the Philadelphia Hospital. They now ask that the present Municipal Hospital buildings, when they are vacated for the new ones in course of erection, be turned over to them for a public homeopathic hospital for the treatment of non-contagious diseases. The Mayor requests from Councils their very best consideration of the suggestion.

Diphtheria Antitoxin to Have Place in Pharmacopeia.—It is reported that the Committee on Antitoxins of the United States Pharmacopeia, which met in this city March 7, decided to place diphtheria antitoxin in the new edition of the Pharmacopeia, which will be issued in January next.

Unusual Operation Performed by Dr. Keen.—An operation never before attempted in this country, and done successfully only four times in the history of surgery in Europe, was performed by Dr. W. W. Keen in his regular Wednesday clinic at the Jefferson Hospital March 4. The operation was for the removal of an osteosarcoma originating in the left ilium. The patient was a man forty-one years of age, in reasonably good general health. He reacted fairly well after the operation but died about 36 hours later. The sarcoma apparently developed as the result of a fall on a pavement seven months ago. Two months later the tumor was noticed and gradually increased in size until larger than two fists. The operation, which lasted one hour and twenty minutes, involved the amputation of the entire left leg and the greater part of the ilium. In all there have been 14 similar operations by European surgeons, with four recoveries.

Traumatic Myositis Ossificans.—This case was reported by Dr. W. J. Taylor. Patient was a young man of twenty-six years, whose occupation was that of schooling young hunters. About the middle of December, 1900, the patient was kicked on the anterior surface of the left thigh by a horse. The injury gave great pain but the patient was able to walk. On Monday the injury having occurred on Saturday, the patient began riding as usual, although somewhat inconvenienced. When seen by Dr. Taylor, three weeks after the accident, there was a marked swelling at the site of injury and movements of the limb gave pain. Operation three days later showed thickened periosteum and small bony particles in the overlying muscles. The periosteum was elevated and the bone beneath was distinctly roughened. The thickened portion of the muscles was removed and the bone curetted. Recovery was uneventful. The removed tissue was examined by Dr. W. M. L. Coplin, who stated that a definite diagnosis from such disconnected fragment of tissue might seem hazardous, but the findings strongly suggested the diagnosis of ossifying myositis.

Two Cases of Myositis Ossificans.—At the meeting of the Philadelphia Academy of Surgery held March 2, there were reported two cases of myositis ossificans that illustrated two classes of this rather rare pathological condition. The first, where bone has formed in the softer tissues, with or without history of injury and with or without connection with the bones of the skeleton or with osteophytes, was reported by Dr. W. W. Keen. The second class is where there is formation of new bone involving muscles and fibrous structures resulting directly from accident to bone or its periosteum. The case reported by Dr. Keen was that of a woman aged forty years, who, at the age of nine, discovered a slightly tender swelling over the left fibula. At the age of fourteen walking became painful and muscle contractures caused the foot to assume marked extension. Tenotomy two years later caused only temporary improvement. Operation in 1901 showed irregular thickening of the deep fascia with what appeared to be bony plates. These plates were continuous with the fibula and there were also a number of them in the overlying muscle. The bony plates were removed through an incision that extended from the upper part of the calf nearly to the heel. The tendo-achillis was lengthened, this allowing the foot to be placed at right angles with the leg. The report from the patient nearly 20 months after operation is that she has suffered no pain in the muscles since and that there is no evidence of recurrence. The removed tissue was examined by Dr. W. G. Spiller who reported the condition as one of myositis fibrosa passing into myositis ossificans.

The Pathology of Ossifying Myositis.—Dr. W. M. L. Coplin, who had reported the histological findings in the tissue removed by Dr. Taylor, spoke of the difficulty experienced by pathologists in making diagnosis from small fragments of tissue, as in the case under discussion. The tissue in question contained masses of marrow cells in a cellular matrix, altogether resembling the cell picture of myeloid sarcoma. The suspicion of myositis ossificans was first aroused by finding newly formed bone along the degenerating muscle bundles. Ossifying myositis has been classified as idiomatic or traumatic, and disseminated or local. Regarding the origin of the condition there is some question as to its inflammatory nature. It is held by some writers to be a dystrophy, thus belonging to the group of diseases including pseudohypertrophic muscular paralysis. This view, however, is not generally accepted. The fact that traumatism is frequently a cause, the presence of lymphoid infiltration and the formation of new fibrous tissue point to the inflammatory nature of the process. It has been thought that it might depend upon the presence of the congenital or acquired ectopia of osteogenetic tissue which is stimulated to growth by irritation; the view that the bony change originates in a congenital defect in the involved parts is an adaptation of this theory. Regarding the condition as one that is essentially inflammatory in nature places it in close relation to the ossifying inflammations of tendon sheaths and glands. Still another view is that myositis ossificans is essentially neoplastic in nature and thus comparable to cases of multiple osteomata in the lungs, glands, etc. The many suggestions offered prove that the origin of the change is yet unknown. That it is infectious in character has even been suggested. In a reported case of gonorrheal myositis and in a case of staphylococcus infection, similar but not identical changes have been recorded. It is not uncommon to find near tuberculous foci osteoid or chondroid or perhaps better, cretaceous areas that may resemble bone. In closing, Dr. Coplin emphasized the possible difficulty in differentiating ossifying myositis from myeloid sarcoma, especially in tissue from the region of the jaw. This difficulty is particularly marked when the specimen consists of only small fragments of tissue.

The Treatment of Exophthalmic Goitre.—Dr. John B. Deaver read a paper on the above subject and reported a case of bilateral removal of the entire cervical sympathetic, *i.e.*, cords and their ganglia. The patient was a young woman of twenty-four years, who had the cardinal symptoms of exophthalmic goiter. Ether was

used as the anesthetic, the patient taking it badly from the start and its discontinuance being necessary several times during the operation. The cervical sympathetic of both sides from above the superior ganglion to below the inferior ganglion was removed. The patient did badly for several days owing to postoperative pneumonia, but finally made a good recovery. The exophthalmos had practically disappeared 24 hours after the operation. The nervous symptoms have also disappeared and the patient is improved in every way. Dr. Deaver believes sympathectomy to be the operation of choice in these cases as the mortality is lower and the cures, when attained, are more perfect. The operation should not be done during the periods of hyperexcitation. This operation is also indicated in certain cases of glaucoma and recurrent epilepsy. Dr. Spiller asked if the removed nerves showed any signs of disease. In one case that came under his notice the superior sympathetic ganglion was found to be considerably enlarged. In reply Dr. Deaver stated that the nerves were now being studied. They presented no gross appearance of disease.

The Drainage of the Chest in Empyema.—Dr. Leon Brinkman, by invitation, read a paper on the above subject before the Philadelphia Academy of Surgery, March 2. The paper was based on a study of 27 cases treated according to a method devised by Dr. Brinkman. The method is somewhat similar to that devised by Beck of New York some years ago, but differs from it in many respects. Dr. Brinkman's objections to older methods are that simple incision and drainage is only temporary in results and not curative, while resection of ribs followed by tubular drainage is unsatisfactory because the tube is a foreign body and causes continual irritation. There is also danger of the tube slipping into the wound. The technic followed by Dr. Brinkman consists of a vertical incision in the mid-axillary line and exposure of the fourth, fifth and sixth ribs, or more if necessary. A specially devised periosteal elevator is then used, the ribs are divided and the pleura exposed. An opening in the pleura is then made in the lower part of the wound and afterward extended upward. If the lung is found to be fixed the adhesions are separated or divided by a knife if necessary. The pleura is then stitched to the skin around the entire margin of the wound, the diaphragm being carefully avoided. Irrigation is not practised as it has a tendency to increase rather than diminish the discharge. Of 47 cases of empyema the first 20 were treated by excision of ribs and the insertion of tubular drainage, while the last 27, as reported, were treated by the method just described. The results in the latter series were very much more satisfactory, there being only two recurrences, both of these being in young females who also had involvment of the lung. The other 25 cases were cured in from three weeks to five months. In five cases the wound edges were afterward stitched and brought together to aid closure. In 21 of the 27 cases chloroform was the anesthetic employed, ether being used in only six. Chloroform is especially indicated in children. If the effusion is large, aspiration should be practised several hours before operation. In making exploratory aspiration, plugging of the syringe may be avoided by filling the instrument half full of saline solution before it is inserted.

In discussing Dr. Brinkman's paper, Dr. Richard H. Harte said that chloroform was generally regarded as the best anesthetic for cases of empyema. He generally uses ether because of some bad experience with chloroform. He would not hestitate to use the latter anesthetic in cases of children. He emphasized the importance of operating rapidly in cases of empyema, the important element here, as in typhoid perforation, being time. After exposure of the ribs, they are divided by forceps with handles six inches longer than ordinary, the increased leverage thus secured aiding in time. A double tube for drainage should be employed and one can hardly get too large a size. The tube should be either very long or very short, as one that just reaches to the lung will cause irritation. A very long one is preferable as it bends over and the end is not in contact with the lung. In cases treated by this method the wound will heal when there is no more pus and this is as early as healing is desired.

CHICAGO.

Report of State Board of Charities.—The seventeenth biennial report of the State Board of Charities was issued a few days ago. The report shows that the average number of inmates of all the institutions under the Board's jurisdiction in 1900 and 1901 was 10,040. In 1901 and 1902 it was 10,448, and for the two years it averaged 10,244. The per capita cost for 1900 and 1901 was $164.09. For 1901 and 1902, the per capita cost was $167.82. For the two years, from July 1, 1900, to June 30, 1902, the per capita was $165.95 per annum.

Almhouses and Jails.—Upon this subject the report says: "It is a pleasure to report that the general condition of the almshouses and jails in this State is improving, although very unsatisfactory conditions exist in many of the Southern counties. The chief matters calling for criticism in certain institutions are neglect and lack of care, old and insanitary buildings, insufficient heating, lack of ventilation, bad plumbing, or none at all, lack of bathing facilities, impure and insufficient supply of water, and inadequate fire protection. Lack of adequate provision and proper help to care for the insane is also a general complaint made by the inspectors." The report gives a detailed description of every almshouse and jail in the State, all of which were inspected by the auxiliary county boards and representatives of the State Board. At the date of inspection, which was June 30, 1902, the total number of inmates in the almshouses was 6,830. Of this number, 2,986 were insane, 334 idiotic or feeble-minded, 54 deaf-mutes, 154 blind, 365 epileptics, 158 children under sixteen years old, and 2,779 not classified, the majority of whom are old and decrepit. The report shows that there were 123 insane under restraint, and 124 locked in rooms in the different almshouses. The report also shows that there were 1,284 prisoners in the county jails. Of this number, 749 were awaiting trial, 383 were serving sentences, 28 awaiting transfer to the penitentiary, 19 awaiting transfer to the State Reformatory, 6 debtors, 80 city prisoners, and 19 insane awaiting admission to hospitals.

Syphilis as a Cause of Chorea.—A paper with this title was read by Dr. L. Harrison Mettler before the Chicago Medical Society, and reported the following case, which he had seen in consultation with Dr. S. L. McCreight: H. P., male, eleven years of age, born at full term, of German parentage, and showing at present unmistakable signs of inherited syphilis. The father, forty years of age, married about fourteen years, confessed to his wife and former physicians that he had contracted syphilis about nine or ten years prior to his marriage. He has had several hemiplegic strokes, has been in the insane asylum, and is now at home, a sad picture of irresponsible, harmless dementia, with paresis. The mother is without any signs of syphilitic taint, and denies having had any miscarriages. There are four living children, aged twelve, eleven, nine and five years respectively, all showing more or less signs of inherited syphilis, such as ozena, skin eruptions, sore throat, diarrhea, Hutchinson's teeth, etc. The patient, who is the second child, appeared to be healthy until he was two

years of age, when, without warning, he was taken with five severe convulsive seizures, one following the other in rapid succession, and all occurring within the space of a few hours. The mother supposed that these were attacks of simple infantile eclampsia, and so failed to note details as to the manner of their origin, continuation and termination. It was during these seizures that the boy's "eyes went wrong," as she expressed it, and left him with his present internal strabismus. Diplopia was present for a time, but now the vision of one eye is almost negative. The examination of the fundi a year or so ago by Dr. McCreight discovered nothing very abnormal. The shape of the head and development of the body show a well-marked condition of degeneracy. About three years ago the mother thought he had an attack of rheumatism, with heart failure. At present, however, there are no signs of organic heart disease. Scarlet fever and measles are to be added to the history. After the convulsions at two years of age, the left side became notably weaker and thinner. There has never been any repetition of the convulsions. At seven years of age the boy suffered his first attack of chorea. It seemed to be slightly more pronounced upon the left than upon the right side. The attack was, however, of the generalized form. Four attacks have occurred altogether, about a year apart, and each more severe than the previous one. Except the last one, they continued only a few weeks, and then gradually disappeared. This intermittence was almost, but not absolutely, complete; in the intervals there were occasional slight choreiform manifestations. The movements during the height of the trouble were all irregular, spasmodic, and incoordinated. They were typically choreic, and not slow or rhythmical, as in the so-called "symptomatic" chorea.

After discussing the nature of chorea, its possible dependence upon syphilis, acquired or inherited, and after showing how inadequately it is referred to by the writers in the books and current literature, the author formulated the following conclusions: (1) Syphilis, in rare instances, is a cause of chorea and should always be thought of as a possibility in the examination of every case. (2) Chorea may be the result of acquired or inherited syphilis. (3) Most of the cases of syphilitic chorea are unilateral, belong to the so-called symptomatic, pre- or posthemiplegic type of the disease; may or may not be associated with other signs of an irritative lesion; are not infrequently developed in hereditary syphilitics, and are to be attributed probably to a functional disturbance of an irritative sort in the cortical or ganglionic motor cells. (4) The existence and recognition of the two forms of syphilitic chorea, namely, the focal and the generalized, supports the inference that all forms of chorea are but the expression of any one or more of a multiplicity of possible etiological factors, which may disturb the functional activity of the upper motor neurones, these factors being all the way from a gross lesion down to a molecular or chemical change not demonstrable with our present means of investigation. These conclusions lead to the corollary that chorea is not a disease, but merely a symptom. (5) When syphilis is decided upon as the cause of a case of chorea, that case should cease to be regarded as chorea, and should be promptly and thoroughly treated as syphilis.

The Tuning-Fork and Stethoscope in the Diagnosis of Fractures.—This paper was read by Dr. Albert H. Andrews. The test for fractures is based upon the fact that bone is an excellent conductor of sound waves, while the soft tissues of the body conduct sound waves very poorly. The test for fractures, especially of long bones, is made by placing the stethoscope in close proximity to the bone near one end, and the handle of a vibrating tuning-fork as close to the bone as possible beyond the supposed seat of fracture. The sound will be transmitted through the shaft of the bone to the stethoscope and through the stethoscope to the ears of the examiner. When the bone is intact, if the test is properly made, the sound of the fork will be heard with great distinctness, but if there is a solution of continuity the sound will either not be heard at all or will be heard very faintly. By comparing the intensity of the sound on the suspected side with the sound heard under similar conditions on the normal side, the question of continuity of bone can be determined.

GENERAL.

Typhoid in Ithaca.—Up to and including the end of week of March 10, there have been 755 cases of typhoid in Ithaca since January 10, of which clinical history has been obtained. The number of unreported cases is unknown, but probably very high. It seems probable that at least 1,000 cases have developed, and the end is not yet in sight. The latest information obtainable would seem to show that the Ithaca water-supply has been infected for over a year, and that the present outbreak is simply a recrudescence of last year's milder epidemic.

Leprosy in Russia.—The Society for the Suppression of Leprosy has recently erected a sanatorium for lepers in St. Petersburg, accommodating 95 patients.

The Dean of Physicians.—Dr. David, of Montpellier, France, celebrated his one hundred and second birthday on February 8, 1903. Born in 1801, he practised his profession till he reached his 98th year. The doctor attributes his longevity and the good health which he still enjoys, to sobriety and an open air life.

Esmarch's Jubilee at Kiel.—The German medical world has recently celebrated the eightieth birthday of Esmarch. A committee comprising Prince Henry of Prussia, Prince Ferdinand of Bavaria, the oculist Duke Charles Theodor of Bavaria, Prof. Gussenbauer and many others eminent in the medical profession, are formulating plans for the erection of a monument to Esmarch in Faenning, his native city.

A Physician Three Times President of a Republic.—Dr. Deucher has, for the third time, been elected President of the Helvetian Confederation. He was elected for the first time in 1886.

Syphilis in Italy.—According to the statistics published by Prof. C. Ruata, 2,000 deaths from syphilis occur yearly in Italy. If to this be added deaths from diseases caused by syphilis, it is calculated that the number directly or indirectly due to that disease reaches in the neighborhood of 30,000 yearly.

Plague Is Spreading.—According to the daily press the Post Office Department has received a telegram from the postmaster at Ensenada, Lower California, near the United States border, that one case of the plague is reported there. It is believed that the disease was brought from San Francisco. A servant employed by Dr. Moya at Villa Union, who was supposed to have the plague, plunged into the river to escape the Health Officers, and was immediately seized by an alligator and dragged beneath the water. This was the last seen of him. Three dead bodies were found in a house on the Cerritos ranch near Mazatlan. It is supposed that their death was due to the plague. The cases are under investigation.

The "Boston Medical and Surgical Journal's" Seventy-fifth Anniversary.—The first issue of the *Boston Medical and Surgical Journal* as a weekly journal under that title appeared Feb. 19, 1828; with this year and the issue of Feb. 19th last, therefore, the *Journal* celebrates its seventy-fifth anniversary even to the day of the month. From February, 1828, to February, 1903, there has been a continuous weekly issue of the *Journal* without intermission. Through all the changes and

chances of medical journalism during that long period,—and these have been both numerous and serious,—the *Journal* has held its own and kept on its way. The London *Lancet* is probably the only other weekly medical journal now in existence with anything approaching such an unbroken record.

Programme of Tours of the International Medical Congress.—The Fourteenth International Medical Congress will be held this year in Madrid, from April 23 to 30, and as usual a number of physicians, accompanied by their families, are planning to attend the meeting. It is therefore thought that it would be of advantage to arrange a number of conducted tours from this country to and from Madrid, as in this way better accommodations can be obtained at reduced prices, besides which, those participating can choose the routes which will enable them to visit the different parts of the Continent that they are desirous of seeing. For this reason four routes have been planned, one with the idea of accommodating those who feel the necessity of making a quick trip to and from the Congress, and others that are more extended and will allow time for sightseeing in the various countries through which they pass. An additional advantage will be obtained in this way, as a traveling conductor who is thoroughly conversant with the languages and customs of the countries visited, will accompany the different parties through the parts of the trip that are comparatively unfrequented routes of travel. The tours are as follows: Tour 1.—Including one week in Madrid during the Congress, with visits to Ronda, Seville, Cordova, Granada, etc., leaving New York by North German Lloyd twin-screw steamship Prinzess Irene, on Saturday, April 11, 1903, due to arrive Gibraltar, April 20; spend the morning in Gibraltar visiting the fortifications, Rock Galleries, etc. Leave by afternoon service by ferry to Algeciras, thence by rail to Ronda, where the night will be spent. Tuesday, April 21, Ronda; leave by morning train via Bobadilla for Seville, arriving 6 P. M. Wednesday, April 22, to be spent in Seville. Carriages will be provided for visiting the Cathedral. The Alcazar, or house of Cesar, the residence of the Moorish and Catholic kings. Leave by night express for Madrid. (Sleeping car berths can be secured through the conductor of the tour; the expense is not included in the fare.) Thursday, April 23, arrive Madrid 10:10 A. M., the day to be spent in Madrid. Thursday, April 30, leave Madrid by night express train for Cordova. Arrive Cordova 6:54 A. M. Spend the morning in visiting the Cathedral. Leave at noon via Bobadilla for Granada, arriving there the same evening. Saturday, May 2, to be spent in Granada. Sunday, May 3, leave Granada by morning train for Algeciras and Gibraltar. Monday, May 4, embark on North German Lloyd steamer Prinzess Irene for New York. Wednesday, May 13, due to arrive New York.

Tours 2, 3 and 4 are extensions of this; full details of which can be had by applying to Cook's, Broadway and Warren St., New York.

CORRESPONDENCE.

OUR VIENNA LETTER.

(From Our Special Correspondent.)

WIEN (Austria), February 14, 1903.

AMERICAN STUDENTS PHOTOGRAPHED—THE PASSING OF CLINICIANS—PROF. POLITZER'S SUCCESSOR—DR. JULIUS MAUTHNER PROMOTED—WHO WILL FILL THE CHAIR OF PROF. NEUMANN?—NO DEARTH IN PROFESSORS—DR. WILHELM TÜRK ON HEMATOLOGY.

DURING the past week the colony of American students in Vienna sat for a photograph in the big "Erste Hof" of the Krankenhaus. The number of those present amounted to a little less than seventy, a number which represents about three-quarters of all the Americans pursuing medical courses here. Considerable as is this contribution to the post-graduate corps of the school, the older habitués assert that it denotes a distinct falling off from previous years. The tide seems to be turning toward Berlin—nor is the cause very far to seek. Time has done much to rob the Faculty of its ancient prestige, and an unfortunate system of regulating its affairs is doing still more.

That great galaxy of clinicians which adorned the Krankenhaus within the last twenty years of the preceding century—the Bambergers, Chvosteks, Alberts, Kaposis, has almost passed over beyond the horizon; only recently Krafft-Ebing, the psychiater, added another to the long list of these unreplaceable dead. But this is not all. Prof. Politzer, perhaps the greatest of living otologists and in the full bloom of his knowledge—witness the fact that he only lately produced a new edition of his text-book, and that he is at present engaged upon a history of medicine—and Prof. Isidor Neumann, the last of the school founded by Hebra, are to be retired as emeritus during the coming year, owing to the purely accidental fact that they have arrived at the biblical allotment of three score years and ten. One would think that the recent deaths of two such veterans as Virchow and v. Kupffer might have afforded sufficient evidence that the brain-cells are occasionally refractory to such iron-bound, or rather rust-bound, theories.

It is rumored that Prof. Urbantschitch, at present chief of the otological service in the Allgemeine Poliklinik, will succeed Prof. Politzer; there is, perhaps, some justification for this belief in the fact that only last week he was promoted from the position of "extraordinary" to that of "ordinary" professor. The same honor was accorded to Dr. Julius Mauthner, Professor of Chemistry. Who is to fill the chair of Prof. Neumann, the dean of syphilography in Europe ever since the death of Fournier of Paris, no one presumes to guess. Perhaps it will be one of the first assistants whom he has educated within his wards during the long tenure of his chair, and of whom everyone without exception has since become a professor; even Dr. Matzenau, the youngest of the family, who only just left the hospital, has already been called to take Rille's place in Innsbruck! Perhaps it will be Dr. Finger, at present in the Wiedener Spital, and a well-known authority on venereal disease.

Notwithstanding this terrible depletion, however, there is a supply which continues to fulfill the demand for good men as soon as it makes itself felt, and that too without wandering very far from the portals of the Krankenhaus itself. For example, the second medical clinic, which dates its fame from the incumbency of Skoda, has ever since been presided over by a succession of its own disciples, surely not the least of whom is Prof. Neusser, who at present holds the chair. And just yesterday (Feb. 13) the Probe-Vorlesung of his first assistant, Dr. Wilhelm Türk, for the title of "Docent," afforded fresh promise that the torch will be passed on to future years in something of the great old style. Dr. Türk, who has devoted most of his attention in past years to the study of diseases of the blood, and who so ably combated the sporozoic theory of the origin of leucemia, as advanced by Löwit in the last Congress, naturally lectured upon a branch allied to hematology, namely the lymphomatoses. His lecture was a summary of his individual views, and as these have never before been published in such succinct form, it may not be amiss to give the substance of the Vorlesung. He states that the lymphomatoses, or lymphgland hypertrophies, may be divided into two great

classes, namely those characterized by a slow and benign course of growth on the part of the lymph glands, and those characterized by a malign form of growth. The former are equivalent to the lymphadenomatous, the latter to the lymphosarcomatous types of the pathologist. Between these two types might be placed a third group with intermediate characters, acute growth without local malignancy, in the sense of the pathologist. The hematological picture given by the disease is apparently independent of the nature of the glandular growth; it is simply determined by the degree and the rapidity with which the proliferated elements are washed out into the blood. Thus in the chronic and acute benign groups of the current disease, there are forms characterized by the complete lack of such a washing out ("Ausschwemmung") by a moderate degree, and by an excessive degree of it, these grades are characterized as the alymphemic. Dr. Türk stated that all three forms of these two groups had been exemplified in his clinical experience. The generally accepted designation of the alymphemic form of the lymphadenomatous group is "Pseudoleucemia"; that of the sublymphemic and the lymphemic forms of the same group is lymphatic leucemia." Clinically these two diseases may be differentiated, but essentially there exists no other distinction between them than that in the former the lymphatic elements are not washed into the blood, whereas in the latter they are. But not only do there exist all intermediate stages, comprehended by the term "sublymphic," but pseudoleucemias may gradually, or acutely and sub finem, develop into leucemias, while on the other hand, the latter may undergo almost a complete hematological revolution of the contrary character. Even in typical alymphic pseudoleucemias, however, a careful examination of the blood always gives some evidence of the diseased function of the lymph glands, *e.g.*, the presence of isolated large mononuclear lymphocytes. As regards the third, or lymphosarcomatous, group of the lymphomatoses, they may be divided into the lymphosarcomata and the chloromata.

The hematological picture, it will be seen, does not in any instance give a clue to the real pathological condition; it only represents the degree of "Ausschwemmung." Moreover, it is well to emphasize the fact that both pathologically and hematologically, one form may pass into another: the benign forms may become malignant, and so forth.

The lecture was attended by members of almost every faculty of the medical college, and was greeted by great applause.

SELF-ACCUSATION AND INSANITY.

To the Editor of the MEDICAL NEWS:

DEAR SIR: Is the man or woman who goes to a police station to confess being the author of a crime, which at the time is holding the public attention, insane or only hysterical? The psychology of self-accusation leads us to the conclusion that auto-accusers are insane. The hysterical accuses *others* but rarely, if ever, him or herself.

In self-accusation the process by which the degenerate arrives at the conclusion that he is the criminal is that of suggestion. First, we have the contemplation of the enormity of the offence against all law and order, then follows the punishment that is to expiate the crime, and it is at this point that mental breakdown commences.

Just as in looking over the side of a high cliff the strongest of us may become confused and dizzy, so the mentally unsound, in contemplating the pain the criminal will suffer on the scaffold, becomes panic-stricken and the terrible thought suggests itself: "Suppose I did it." The suggestion in time becomes an obsession and torments the patient until either self-accusation or suicide brings him relief or, in despair, repetition in *fact* of his imaginary crime.

It is here I wish to dwell for a moment. Insane acts are committed regardless of consequences. Whether the result be the theft of a loaf of bread, or the murder of a family in their sleep, the prompting is the same. A man who stationed himself on a housetop and cast heavy granite blocks down upon the thoroughfare below would not be allowed to continue his occupation until some disaster resulted. So, too, in the auto-accuser, essentially insane, suggestion is potential murder. Shall we laugh at these men and dismiss them contemptuously as "cranks" or put them under restraint? A "crank" with "suggestions" that one day make him play the clown and the next day, as likely as not, attempt or commit murder, is not a safe member of the community.

J. R. CLEMENS.

St. Louis, Mo.

SOCIETY PROCEEDINGS.

THE PHYSICIANS' CLUB OF CHICAGO.

Regular Meeting, held February 23, 1903.

Henry B. Favill, M.D., in the Chair.

The Reasons for a Special Effort to Prevent the Spread of Tuberculosis.—There are three reasons, said Dr. William A. Evans, to be comprehended under this title. Discussing the first of these reasons, he said that tuberculosis still remains the chief source of death and the subject of prime consideration. In Philadelphia, during the census year of 1900, tuberculosis was responsible for 11.5 per cent. of the total death rate; in New York State for 10.6 to 11 per cent.; in Greater New York, for 7,919 deaths; in Chicago, for 2,700 deaths, or 9.5 per cent of the total death rate; in San Francisco, 1,049 deaths, or 16 per cent. of the total death rate. In the ten principal cities of this country, tuberculosis is responsible for 18,763 deaths, or 10.8 per cent. of the total death rate each year. Compared with other infectious diseases which receive greater attention in the matter of prevention than tuberculosis, the relation in Chicago to diphtheria is 4 to 1; scarlet fever, 7 to 1; typhoid fever 7 to 1. Consumption kills in Chicago each year one and two-thirds times as many people as diphtheria, scarlet fever, typhoid, smallpox, measles, and meningitis combined. A comparison of the death rate from these diseases in the ten principal cities of this country shows that 18,763 die of tuberculosis; and 12,261 die of typhoid, scarlet fever, diphtheria, measles and whooping-cough combined.

Another point worthy of consideration is the approximate money cost of tuberculosis. Although pneumonia is a frequent disease, yet the patient is sick for only a short time, and is a relatively small tax on the community. The subject of tuberculosis, on the other hand, is sick on an average of from one and a half to three years, and during much of this time is a heavy tax on the community. According to Vaughan's estimate, there are one and a quarter million tuberculous subjects in this country. At $1.16 cost to the community, which is not a high figure, the annual cost of tuberculosis is $700,000,000. Biggs, of New York, estimates that the cost in this country is $350,000,000. Prior to the spurt in industrial activty, the total money paid during the last five years for exports was only $800,000,000.

The speaker called attention to the inaccuracy of comparative statements that are published now and then, in which comparison is made between the death rate of to-day and that of forty or fifty years ago. The

diagnosis during those decades was not accurate, and therefore a comparison is of no value. The statistics of 1880 show that there is a slight decrease in the death rate from tuberculosis, but there is a decrease also in the death rate from every other disease, with the exception of pneumonia. The decrease in the death rate from tuberculosis is not commensurate with the decrease in the death rate from other diseases, that is, infectious diseases. Looking at it from this standpoint, there is a relative increase in the death rate from tuberculosis, and it becomes a question of growing rather than declining importance.

Can tuberculosis be cured? According to the statistics compiled by Dr. Appel, U. S. A., in charge of Fort Bayard Sanitarium, 7.4 per cent. of cases are clinically cured; 11.6 convalescent; 34.9 improved; 25.2 unimproved; 20.9 per cent. die. The United States Army Hospital is required to take tuberculosis in all stages, and a considerable number of cases that figure in these statistics are people who die before they have been in the institution one month. Again, these people in many instances are syphilitics, and, in most instances, alcoholics, which would, of course, influence the statistics. By the term clinically cured is meant those cases that no longer have fever; cough; no bacilli in the sputum, and that no longer react to tuberculin. The statistics of the Government Hospital at Fort Stanton, in charge of Dr. Carrington, show that 24 per cent. are apparently cured; 53 per cent. improved; and that 23 per cent. die. Of course in the early stage, 66.6 per cent. are apparently cured; 30 per cent. improved, and 3.3 per cent. die. In the second and third stages, 13 per cent. are apparently cured; 51 per cent. improved; 3 per cent. unimproved, and 26 per cent die. Latham, in a study of the statistics of 44 sanatoria, found that the average of cures is 30.6 per cent., and the average of improved cases 71.4 per cent. From a study of the statistics of the German Insurance Office, embracing twenty thousand cases, it is seen that 70 to 80 per cent. are apparently cured, and 40 to 45 per cent. permanently cured at the end of three years.

As further evidence bearing on this question, Dr. Evans cited autopsial statistics. He did not agree with the statistics of Bouchard and Ribbert, who claim that healed lesions are found in from 75 to 100 per cent. of the people dying from diseases other than tuberculosis. Nor does he agree with Massini and Bollinger, whose figures range from 27 to 39 per cent. The truth lies somewhere between Hertler, who gives 4.7 per cent., and Latham, who gives 22 per cent. Osler says 7.5 per cent., as the result of one thousand post-mortems. Wethered gives 10 per cent. Knopf agrees with Latham.

In conclusion, Dr. Evans called attention to the work of Behring, who is attempting to produce artificial immunization in animals.

In What Way Can the General Practitioner Assist in the Purposes of the Crusade?—This was considered by Dr. N. S. Davis, Jr. The position of the general practitioner in this movement is educative, but his influence should not be limited to educating his patient only. The hygienic treatment of tuberculosis is the only treatment that holds out any hope of permanent recovery. It is essential that we educate those about the patient, those who must be associated with him. The patient should live in light rooms, where there is good ventilation, and where the surroundings are clean and hygienic. It is impossible to maintain cleanliness in a dark place. Therefore, these patients should never be permitted to occupy dark rooms that are poorly ventilated; that receive no sunlight or even daylight. We must teach our patients and their friends that the rooms must be thoroughly ventilated; that they must not be afraid of draughts; that there must be fresh air. It is better to stand the risks of exposure to draughts, which are small, than to constantly respire foul air. Patients and their friends should be taught to collect and destroy the sputum. This should not be overlooked at any time. There is one point that is oftentimes overlooked by the practitioner, namely, that patients can be taught to suppress a cough. When coughing is accompanied by expectoration, it should be promoted, and not suppressed, but much coughing is done not for the purpose of expelling something from the air passages, but to relieve a tickling in the throat. Such a cough can and should be suppressed. The little spray thrown out by the effort at coughing contaminates the air and walls of the room, and may be the source of infection. These rules are of benefit to the patient, but particularly so to those who come in contact with him, by preventing contamination. The importance of following these rules can be made more apparent by telling the patient that he is liable to reinfect his own lungs in new places by constant reinhalation of bacilli from the air.

He believes that the statistics read by Dr. Evans would be changed materially if our nurses were educated to take care of tuberculous patients as they are to take care of typhoid fever and pneumonia cases. This is one of the most important points to be considered in the matter of prevention of tuberculosis. The physician rarely comes in contact with a patient's friends and relatives, whereas the nurse comes in contact with both all the time. She can point out the advantages as the physician cannot. Just as soon as this knowledge can be disseminated throughout the community, the community will perceive the necessity for observing hygienic rules. They will appreciate the necessity of thorough ventilation in the street-car, public conveyances of all kinds, theaters, churches, downtown stores, etc. These are points the public does not appreciate thoroughly, nor can the laity be made to do so until educated much more perfectly than at present.

Committee on the Prevention of Tuberculosis of the Visiting Nurses' Association, Chicago.—This paper was read by Dr. Arnold C. Klebs. The outline of the work as proved by the Committee is as follows:

Considering the fact that the family members of a consumptive and those living in unhealthy conditions are the ones most threatened by the disease, education on the subject and eventually proper material aid have to be furnished to them primarily. The distribution of instructive pamphlets alone usually proves insufficient. It is therefore necessary to enhance the value of such printed instructions by personal interviews and repeated visits. For this purpose the cooperation of specially trained physicians and nurses, with the assistance of charity organizations, is deemed of importance. To facilitate such cooperation and to insure the uniformity of the measures to be employed, it is planned to establish a central office. From this office the general work is to be directed and carried out in district offices in the different parts of the city.

(1) The work in the central office is to be done by an executive committee of six, to be elected from the (2) general committee of forty, of which twelve are to be physicians. (3) A special tuberculosis fund may be established, if necessary. (4) Work to be done in the central office: To collect and file all information regarding tuberculosis in Chicago. To ascertain the causes for the greater prevalence of the disease in certain districts. Examine the conditions of life of the people in those districts, and especially the condition of dwellings. To start a collection of literature on tuberculosis, especially in its socio-economic aspect. To

maintain correspondence with other organizations with similar purposes. To prepare instructive reading matter on the subject for distribution among the public, especially on (1) how to avoid contracting tuberculosis. (2) Predisposing causes of tuberculosis, and how to avoid or overcome them. (3) Letter to store-keepers and manufacturers, telling them how they can best help the cause. (4) Letter to hotel-keepers on the same. (5) Letter to school-teachers and superintendents on the same. (6) Instruction to nurses as to how to proceed in cases of tuberculosis in the different stages, what to do for the other members of the family, etc. (7) Instructions to district physicians: (*a*) Which cases to treat, and how; (*b*) which cases to report to central office; (*c*) what details as regard hygiene and sanitation are to be investigated in a consumptive's family. (8) For district physicians: Classification of tuberculous cases according to the physical findings: (*a*) Extent of disease; (*b*) degree of virulency; (*c*) duration of disease, and (*d*) prognosis. (9) A popular treatise on the subject of tuberculosis, explaining the exact degree of the danger of contagion and emphasizing the importance of predisposing factors. Also an outline of the measures inaugurated in Chicago. To make arrangements for public lectures on topics of tuberculosis and public and individual hygiene in all parts of the city. Also to induce the press to give publicity to such topics. To cooperate with the health authorities and charity organizations in the enforcement of measures which will promote public hygiene. To see to the disinfection of houses in which consumptives have died, and to ascertain the most efficient and practical method, which will accomplish this. To procure information about healthful occupations for the employment of persons working under unhygienic conditions, eventually furnishing them such positions. To decide on the advisability of transferring persons attacked with or predisposed to the disease to other climates, eventually providing them with positions abroad. To plan, found and eventually maintain health farms for convalescing or predisposed children, sanatoria for curable cases, and hospitals or homes for advanced cases. To advance the introduction of modern methods in existing institutions, receiving consumptives. To test new ideas in the treatment of the disease which promise results. To supply the needy with food, medicines, disinfectants, spit-cups, and articles which will promote conditions of hygiene and cleanliness in their homes. To extend aid to all efforts at organizations for the prevention of tuberculosis, and to stimulate activity in this direction everywhere. To examine all cases applying for help and treatment at the office or in their homes, and to decide upon the most efficient procedure in such cases for their own as well as for the benefit of their families. To facilitate and increase the radius of such work by the foundation of district offices, wherever they may be needed. Each office to have one or more physicians and nurses in charge, which will carry on the work as outlined by the central office.

General Discussion.—Dr. Robert H. Babcock stated that whenever tuberculosis has been diminished, it has been through the intelligent efforts of the medical profession, and especially by bringing to bear the influence of public health boards. The first step in the educational movement regarding tuberculosis should be the education of the medical profession. Many physicians are entirely oblivious to the necessity of preserving proper hygienic measures in cases of tuberculosis. They should educate the patient and the attendants. The medical profession should endeavor to secure proper legislation along the lines of prevention and treatment of the disease. If this work is to be carried on successfully, it must not be done by a handful of devoted men, but the local and State health boards should be given powers which will enable them to combat successfully this disease. The local board of health is more or less hindered in its ability to cope adequately with this disease. It has not the power to carry out measures of disinfection, to say nothing about registration of these cases. This power must come through the State legislature. This body must be shown the necessity for establishing public sanatoria and hospitals throughout the State for the care of consumptives.

Dr. Walter M. Fitch directed attention to the susceptibility to infection. The entire bronchial tract is lined with ciliated epithelium, which is constantly vibrating and throwing out foreign material from the air passages. When the lungs are fully expanded, these cilia operate perfectly, sweeping clean the mucous membrane from any disease germs which may lodge upon it. If, on the other hand, there is partial collapse of these bronchial tubes due to imperfect expansion, pockets are formed into which the germs are drawn and where they remain. The cilia cannot remove them. Many individuals are growing up with a subnormal development of the chest. Obstructions to respiration in the form of adenoids and enlarged turbinals are overlooked in childhood; children grow up with a contracted chest, the result of subnormal respiration. They are susceptible to lung infections. A well-developed chest is not susceptible to such infection, and much can be done to overcome this susceptibility to the disease.

Dr. George W. Webster considered two factors: (1) the germ; (2) the susceptibility of the individual. As it is impossible to destroy all the tubercle bacilli, it is necessary to take every precaution toward prevention of the disease. The form of chest and the type of tissue in which the disease is prone to develop do not receive sufficient recognition. In some families individuals with special predisposition to tuberculosis in the way of deficient expansion of the chest are found, and these individuals should be impressed with the necessity for proper hygienic training. They should be informed of the predisposing factors to tuberculosis, and urged to live in hygienic surroundings, take proper exercise, to observe cleanliness, temperance, and to aerate the lungs perfectly. The importance of institutional treatment should be dwelt upon. Institutional treatment is of value chiefly because it teaches these patients their duty to themselves, their duty to their family and to the public. Institutional treatment is of value because it removes these persons from their home surroundings, and in that way removes a focus of infection. He emphasized the importance of proper legislation, which is essential to carrying out proper methods of prevention. He urged upon the profession the necessity for taking steps to defeat a bill now pending in the legislature, whose purpose it is to repeal the so-called "birth and death bill." This birth and death bill is the first great step in medical legislation taken by the State of Illinois. Furthermore, steps should be taken to promote the establishment of a State sanatorium for consumptives. Every physician should do all he can in this direction. It is a duty he owes to himself, his patients, and the public at large. He considered the plan proposed by Dr. Klebs as eminently practical and sufficiently elaborate to meet all the requirements of the case. In conclusion, he offered the following resolution:

"Resolved, That it is the sense of the Physicians' Club that its members heartily approve and endorse the plan proposed by Dr. Klebs for preventing the spread of pulmonary tuberculosis." Carried.

Dr. L. Harrison Mettler called attention to the fact that even the more intelligent of the laity do not consider tuberculosis as a contagious disease in the sense as is scarlet fever. He suggested that properly guarded articles be given to the public press, journals and magazines for the purpose of educating the public. The public can be reached better through a daily paper than through any other medium. He endorsed the plan proposed by Dr. Klebs of giving public lectures on the prevention of tuberculosis. These lectures would convey information directly to the people, who should be impressed with the fact that tuberculosis is communicable, although not in the sense that scarlet fever is.

Dr. A. M. Corwin stated that the element of depressed tissue resistance did not receive sufficient recognition in the matter of susceptibility to tuberculosis. He referred to the poor architecture, from the standpoint of hygiene, of the modern building. The atmosphere in most of them is foul, because of insufficient ventilation and poor lighting facilities. He suggested that it would be interesting to ascertain what proportion of cases of tuberculosis come from the class of people who spend much time in these buildings, particularly the poorly vitalized class. The dust-laden atmosphere in these buildings produces a primary inflammation of the pulmonary tissue, thus affording a suitable medium for the lodgment and growth of the tubercle bacillus. This matter is of equal importance with the proper hygiene of the home and hospital.

Dr. Arnold C. Klebs said that he believes the public would resent any intrusion by public health officers in a disease which affects the victims rather slightly. Legislation would probably necessitate such an intrusion, and give rise to conflicts of authority. That is one reason, probably, why the health boards have been unable to do more than they have in the prevention of this disease. It is also the reason why the registration of tuberculous cases is objected to, and although this would be an ideal measure, yet it cannot be carried out. Another thing that should be done is thorough disinfection of the dwelling occupied by a deceased tuberculous patient. This would be a great factor in prevention.

Dr. John A. Robison said that physicians should criticize any shortcomings of the City or State governments in carrying out proper hygienic measures. Much can be done if pressure is brought to bear on the city officials, so that they would give the local board of health more power to carry out proper sanitary measures, not only with regard to the prevention of tuberculosis, but also the prevention of other infectious diseases. He commented favorably upon the work done by the committee appointed by the Chicago Medical Society to investigate the conduct and management of the Hospital for Consumptives at Dunning.

BOOK REVIEWS.

DISEASES OF THE PANCREAS, AND THEIR SURGICAL TREATMENT. By A. W. MAYO ROBSON, F.R.C.S., Senior Surgeon, Leeds General Infirmary; Emeritus Professor of Surgery, Yorkshire College, Victoria University, etc., and B. G. A. MOYNIHAN, M.S. (Lond.), F.R.C.S., Assistant Surgeon, Leeds General Infirmary; Consulting Surgeon to the Skipton Hospital and to the Mirfield Memorial Hospital, etc. W. B. Saunders & Co., New York, Philadelphia and London.

AN especial interest attaches to the present volume, since it is a pioneer in a new field. The pancreas and its diseases have formed a topic which up to recent years has been dismissed with the briefest possible mention, even in medical works, while it has found no place whatever in the literature of surgery. The work of Fitz, Körte and Oser, however, and especially the recent researches of Opie, have made an excellent beginning and numerous recent observations have done much to elucidate the pathology of the gland from the standpoints of diagnosis and treatment. A sufficient number of well-authenticated cases has also been reported to indicate the importance of the subject and consequently the interest of the profession has been aroused to a degree which makes the appearance of the present work particularly timely.

Notwithstanding that the outlines of the subject have been given more or less distinctness by the work already done, still there is a great deal of vagueness and haziness as to detail attaching to it, so that at the present state of knowledge such a contribution as this can be presented only in a more or less tentative form. Such is the point of view of the authors whose preface avers that their book is intended mainly to record and review the work done in the past and to indicate, so far as is possible, the scope and trend of future research.

Considered in this way, the book leaves nothing to be desired and covers the ground remarkably well. The two initial chapters treat of the anatomy and development of the organ together with the methods of gaining access to it for the purpose of operation and of the experimental work that has been done, as well of pancreatic diabetes in man. The following sections then consider injuries of the pancreas; pancreatitis, acute, subacute and chronic; pancreatic calculus; pancreatic cysts and new growths of the pancreas. Many illustrative cases are given for each disease and a number of half-tones of gross and microscopic pathology have been added.

THE PROCEEDINGS OF THE CHARAKA CLUB. Vol. I. William Wood & Co. $3.50. Limited Edition.

ALL physicians who find recreation in indulging their taste for literature and history will find themselves stimulated by the contents of the Proceedings of the Charaka Club. It is a collection of papers read by a few of the busiest men of New York who, nevertheless, find time to interest themselves in medical history and artistic and literary subjects connected with their profession. Their Club, whose name was chosen in honor of the Hindoo Sage Charaka, has met monthly for two years and has published a selection of the papers read at the meetings. These contain valuable historic material and are illustrated with beautiful reproductions. For instance, with the paper by Charles L. Dana, on the Cult of Æsculapius, are published fifteen halftones of the various celebrated statues and busts of the god that are known to have been discovered and preserved in museums, also a picture of the restoration of the ruins of the temple of Æsculapius at Epidauros, which dates to probably 500 years before Christ. This latter, copied from the large plates that hang in the N. Y. Academy of Medicine, represents the Hieron or Sacred Grove containing the Temple, the Tholos or Sacred Well, the Abaton or the dormitory of pilgrims, and the Temple of Artemis.

The paper by Dr. Sachs on "Hindoo Medicine" contains a most interesting selection of legends and extracts taken from Hindoo philosophy, and arranged to give some conception of the mingled philosophy and superstition of the Indian practitioner of old. The curious ideas concerning generation, consumption, fevers, surgery, and the express direction concerning the phases of the moon and the influence of devils to be observed in operations, together with a description of the Ayur

Veda, the medical classic of India form an original contribution to American literature.

Dr. Gerster's article on the Hippocratic Doctrine of the Injuries of the Cranium and The Ophthalmology of the Greeks by Dr. Ward A. Holden are bits of medical antiquity; while several articles in lighter vein are to the point and amusing.

Three poems of Dr. Peterson's are excellently illustrative of the writer's ability to embody the spirit of science in poetry. The verses entitled Heredity are as beautiful as they are powerful.

The volume is finely printed and artistically made. The number of copies of this edition is very limited. It will doubtless be soon difficult to obtain, as the character of the club work and the reputation of its few members makes their work especially interesting to men who love their libraries.

DISEASES OF THE SKIN. A Manual for Students and Practitioners. By JOSEPH GRINDON, Ph.B., M.D., Professor of Clinical Dermatology and Syphilis, Washington University; Dermatologist to the O'Fallon Dispensary, etc. Series Edited by BERN B. GALLAUDET, M.D. Lea Brothers & Co., Philadelphia and New York.

ALTHOUGH this is classed as one of a series of pocket text-books it covers the field of dermatology so thoroughly that it seems worthy of a more dignified appellation, and as a matter of fact, for completeness and practical utility it outranks many a more pretentious publication. The compactness of the volume has been attained simply through the omission of all discursive padding and a terse method of arrangement and discussion. The usual system of classification is followed fairly close and each disease is considered in paragraphs under the headings of Synonyms, Definition, Description, Etiology, etc., which, in very few words, give a good idea of its nature and, what is perhaps of even greater practical importance, of the most promising methods of treatment. The work differs greatly from most of the shorter text-books gotten up mainly to aid students in cramming for examinations in that it is not a simple condensation or compilation from the standard treatises but embodies the results of the work and experience of a trained clinician whose observations are sufficiently original and authoritative to command attention from every one. The subject-matter is also presented much more attractively than is usual and the sprightliness of the author's style makes very entertaining reading.

The illustrations are above the average and the binding is unusually artistic for a medical book.

THERAPEUTICS OF DRY HOT AIR. By CLARENCE EDWARD SKINNER, M.D., LL.D. A. L. Chatterton & Co., New York.

THERE are no affections that are the occasion for more opprobrium to medical therapeutics than certain chronic conditions of the joints usually classed under such headings as rheumatism, sciatica, old sprains, arthritis deformans and local septic affections. The treatment of these affections with lithemia, neuralgia and myalgia has of late years been decidedly improved by the introduction of the hot air, or baking method. With proper precautions a temperature of 300 to 400 degrees can be borne for a considerable period by a chronically affected joint and the limb comes out from the treatment much more supple and consequently the source of less discomfort than before.

Dr. Skinner says very well that though the use of dry superheated air as a therapeutic measure has been before the medical profession for several years, yet it is still for the average practitioner an unknown quantity. His idea is to supply this want in our therapeutics. He accomplishes his purpose in a very simple, practical way. Each of the conditions noted above, as well as pneumonia, pleurisy, chronic peritonitis, and some others are touched upon and the technical details for their treatment demonstrated by a man who has himself manifestly made use of the methods he describes. His book then is likely to be of service to all those who are interested in mechanical therapeutics for chronic ailments and its consultation by the profession will be likely to take these diseases more and more from the hands of the charlatan and the osteopath.

HOW TO SUCCEED IN THE PRACTICE OF MEDICINE. By JOSEPH MCDOWELL MATHEWS, M.D., LL.D., President of American Medical Association, 1898-99, etc. John P. Morton & Company, Louisville.

DR. MATHEWS has certainly had the experience that would enable him to write a book of this kind for the profession and even casual reading of it shows that he has used his opportunities well. He says that he has tried to write a guide to success, intended principally for medical students and young practitioners of medicine. As to his success in accomplishing this object, those for whom the book was especially written will be the best judges. Dr. Mathews is almost too modest, however, when he says that he hopes the book may give some comfort and advantage to a few struggling young doctors at least. No one who takes his profession of medicine seriously will fail to find many things that are of interest in the book. Such chapters as "The Young vs. the Old Doctor," "The Country vs. the City Doctor," "Art in Medicine and some Rare Types That You Will Meet," The Smooth Doctor, the Church Doctor, the Fool Doctor, the Lodge Doctor, the Newspaper Doctor, the Book-worm Doctor, the Effeminate Doctor, the Over-polite Doctor and the Unsuccessful Doctor, promise good things and the promises are fulfilled. Every practitioner will have his ideas clarified by reason of Dr. Mathews' book.

A REFERENCE HANDBOOK OF THE MEDICAL SCIENCES. By various authors. A new edition. Edited by ALBERT H. BUCK, M.D., of New York. Vol. V. Inf. Mos. William Wood and Company, New York.

WE have praised the earlier numbers of this splendid work in unmeasured terms and feel, with the appearance of each new volume, that the habit grows. This present volume is most excellent.

From Inflammation, the introductory article, a model of clear and philosophic description, not equaled anywhere in any article of similar proportions, to Mosquitoes, this fifth member of the Handbook is filled to repletion with good and useful articles.

The series of articles on Insanity is entitled to more than passing mention. They are a text-book in themselves and a most excellent one. Stewart Paton has contributed the article on Classification and he gives the Kraepelin classification in full; H. J. Berkeley considers the general "etiological factors," Adolf Meyer has an admirable short summary of the general pathology; The General Symptomatology is written by Charles P. Bancroft, and is excellently illustrated; H. A. Tomlinson contributes on the general diagnosis and Henry R. Stedman on the Prognosis. General Treatment and Care is taken by Theodore H. Kellogg; Medicolegal Aspects is ably discussed by Henry E. Allison. Following this several of the more pronounced forms are given; Confusional Insanity by Edward B. Lane; an interesting and highly suggestive paper by William A White on the Alcoholic and Drug Intoxications follows;

General Paralysis is described in full by H. M. Bannister; Insanity of Cerebral Disease is by the same author; Insanity of the Neuroses is a suggestive article by W. E. Fisher. Henry R. Stedman considers Dementia Praecox, and A. E. Brownrigg has a careful and interesting article on Senile Insanity. Climacteric Insanity, Melancholia, Manic-Depressive Insanity, Mania Degenerative Insanity, Paronoia, Puerperal Insanity, Thyreogenic Insanity, and Idiocy and Imbecility complete the series with such well-known observers as Pearce Bailey, Defendorf, Hoch, Tuttle, Keniston, and others as authors. The collection of articles is an authoritative one.

Other noteworthy articles are on the Iris, Intestinal Surgery, the Joints, the Jaws, Kidneys, Labor, Larynx, Liver, Lungs, Lymphatics, a truly excellent and modern contribution, Mastoid Operations, Metabolism, Military Hygiene, Milk.

There is but one discordant note in this truly revised work and that seems to be in the domain of inorganic materia medica. There seems to have been no attempt made to correlate the many numerous studies that have been made in recent years on the pharmacology of these inorganic compounds, studies which are as important as any others in the domain of pharmacodynamics. The relationships of the study of physical chemistry and the action of the inorganic salts, an absolutely essential conception in the study of these compounds, is not even hinted at.

The work is of such superior character that this minor blemish should be corrected.

BIOGRAPHIC CLINICS. The Origin of the Ill-Health of De Quincey, Carlyle, Darwin, Huxley and Browning, by GEORGE M. GOULD, M.D., Editor of American Medicine, etc. P. Blakiston's Son & Co., Philadelphia.

DR. GOULD'S little book has attracted no small amount of attention and is a distinct contribution to a phase of medical history in which there will yet be many other monographs. There is no doubt that there are many accepted historical statements that will have to be modified in the light of our present knowledge of medicine. As has been pointed out a number of times of late, some of the stories of poisonings in history will have to be modified by the recent information with regard to appendicitis, gynecological diseases and other abdominal conditions.

Dr. Gould has taken the one idea of eye-strain and has shown that it is not improbable that much of the long years of illness on the part of these five great English writers was really due to the fact that they were suffering from overuse of eyes whose refractive powers needed correction. The book is well worth the reading. It involves a detailed study of the lives of these men that shows how thoroughly conversant the writer is with the pathological conditions present.

Perhaps the ideas have been pushed too far. There are even eye specialists who would not agree in attributing so many symptoms as Dr. Gould does, even to the severest of eye-strains.

THE EARTH IN RELATION TO THE PRESERVATION AND DESTRUCTION OF CONTAGIA. Being the Milroy Lectures at the Royal College of Surgeons in 1899. By GEORGE VIVIAN POORE, M.D., F.R.C.P., Professor of the Principles and Practice of Medicine, University College, London. Longmans, Green & Co., New York, London, and Bombay.

THIS work contains some 14 Milroy lectures and eight more miscellaneous papers on general sanitary subjects. The Milroy lectures have the great merit of being short, averaging less than ten pages each; they include short accounts of tetanus; anthrax; diarrhea, dysentery, and cholera; Malta fever, plague, diphtheria; malaria, blackwater fevers, tsetse fly disease, louping ill, Texas cattle fever, horse sickness; enteric fever; the Maidstone epidemic.

Immunity and dangers of wounds occupy a chapter, agriculture and miscellany occupy four of five of the remaining chapters in this series.

The work contains much matter that is well-known woven in an interesting manner. There is little that is new, or be it said, with bated breath, that is modern. So far as the main argument is concerned there seems to be little support even in the author's own writings that the soil has much to do with disease, tetanus perhaps being the only organism that unquestionably and habitually inhabits that medium.

It would seem that a clearer presentation of actual modes of contagion might have been more profitable, yet it is of interest to see how meager and thin the soil theory of disease has become.

The papers on general sanitation and agricultural problems are admirable and interesting.

MEDICAL MICROSCOPY. Designed for Students in Laboratory Work and for Practitioners. By T. E. OERTEL, M.D., Professor of Histology, Pathology, Bacteriology and Clinical Microscopy, Medical Department, University of Georgia. P. Blakiston's Son & Co., Philadelphia.

THIS is an excellent, practical manual and admirably adapted to the use of beginners in microscopical science. This is particularly true of the introductory chapter on the microscope which is short, well expressed and contains the facts that every worker with a microscope should thoroughly master. The chapters on microscopical methods are also concise and useful.

There are further chapters on Bacteriological Technic and the Pathogenic Bacteria; Tumors, well illustrated; the Blood, this chapter might have been illustrated to advantage; the Urine, Sputum and Feces.

The scope of the work is thus seen to be one for beginners and it very well deserves praise and good fortune.

OBSTETRICAL NURSING FOR NURSES AND STUDENTS. By HENRY E. TULEY, A.B., M.D., Prof. of Obstetrics, Kentucky University, Medical Department; Visiting Obstetrician to the John N. Norton Memorial Infirmary, Louisville City Hospital, etc. G. P. Engelhard & Co., Chicago.

THIS little book is of unusual worth, and should prove to be a valuable aid to both nurses and beginning students in the study of obstetrics. It is both comprehensive and lucid, taking in all that is useful and practical for the proper training of a good obstetrical nurse. The various essentials in the care of the patient and the child are set forth so that the laymen as well as the nurse or student has no difficulty in understanding the rationale of the physician's objects and ideas.

In some few places the author is somewhat at variance with the more modern ideas of the care of the child. He advises that the veil, which has long since been discarded, be placed over the child's eyes the first few times that it is taken outdoors. This is the delight of the oculist and affords him an opportunity to swell his practice. We doubt the benefit to the child.

On page 92 is to be found a picture that is open to most scathing criticism. There is represented the proper application of the forceps. The nurses and attendants are clad in sterile gowns while the operator applies the forceps without taking the pains to remove his coat or cuffs. In the light of such a display, it would

seem doubtful that he had considered it worth his while to wash his hands. Such pictures are not fit to be published, as they are liable to do a great deal of harm.

There are excellent lists of articles for the mother to prepare previous to her confinement, which are both sensible and reasonable. Ordinarily these lists are impossible and so expensive that they are both beyond the understanding and pocketbooks of those for whom they are intended.

The last chapter of the book is given up to the preparation of the various foods that may be of service during the puerperium. The recipes are simple and easy to carry out.

THE AMERICAN YEAR BOOK OF MEDICINE AND SURGERY. Being a Yearly Digest of Scientific Progress in all Branches. Drawn from Journals, Monographs and Text-books, both American and Foreign. Edited by GEO. M. GOULD, M.D. Volume on Medicine. W. B. Saunders & Co., Philadelphia.

IT is not at all surprising that this volume, although not characterized by the presentation of any extraordinary developments in medicine, should present an immense amount that is interesting and valuable. It of necessity reflects to at least the usual degree, the influence of surgical work and this is noticeable for instance in the articles touching on the diseases of the pancreas. Mayo-Robson gave a tremendous impulse to the study of pancreatic disease in this country by his classic address on the subject in Washington three years ago, and the borderland between the surgery of the pancreas and technical medical disorders of that organ is very cloudy.

A point that is particularly interesting in the volume is the attention which is given to parasites. This is probably the outcome of the great activity of our government workers in Washington, and it presents a great deal of work in this department of medicine in a most interesting manner. There is a large space devoted to pediatrics. The ever-present problem of milk in infant feeding occupies a great portion ot the space. Very naturally, under general medicine, one finds that a great deal of consideration has been given to tuberculosis, the natural outcome of Koch's communicaton to the English Congress. That and abstracts of dissertations bearing on the spitting nuisance form the bulk of this chapter. The final chapters of the book touch most interestingly on the management and control of infectious diseases, on general hygiene food, drink and poisons and vital statistics. The newer drugs are also given adequate space so that in every way the book is an excellent example of modern progressive medicine. It is well printed and well made in every way and can but form a valuable adjunct to the library of student or practitioner.

A HANDBOOK OF MATERIA MEDICA, PHARMACY AND THERAPEUTICS. Including the Physiological Action of Drugs, the Special Therapeutics of Disease, Official and Practical Pharmacy, and Minute Directions for Prescription Writing. By SAM'L O. L. POTTER, A.M., M.D. Formerly Professor of Principles and Practice of Medicine in the Cooper Medical College of San Francisco; etc. Ninth Edition, Revised and Enlarged. P. Blakiston's Son & Co. Philadelphia.

DR. POTTER'S Handbook now has over 900 pages of text and fifty pages of index, so that it has grown out of the proportion of a handbook in the ordinary sense of the word. It would remind one in certain ways of the German Handbücher which sometimes reach such immense size as absolutely to require a stand to hold them. Dr. Potter's book has increased in value as in size. In fifteen years it has reached its ninth edition and it well deserves the popularity it has enjoyed.

This present edition has been very carefully brought up to date. It is announced in the preface that in the section on materia medica thirteen articles were rewritten and forty new articles were inserted. The new matter includes paragraphs on such subjects as argentamin, argonin, creosotal, dionin, dormiol, eucain, the glycero-phosphates, heroin, holocain, iodothyrin, nervanin, orthoform, protargol, urotropin and zinc stearate. In the section on therapeutics new articles were inserted on local anesthesia, beriberi, dhobie itch, and tropical fevers which have taken on a new interest since our acquisition of tropical territory. New articles are also written on heat stroke, hemoglobin uric fever and bubonic plague.

The volume is a model of good typography. The type chosen and the arrangement of paragraphs with capitalization and the use of smaller type for less important material in easily recognizable gradation is especially commendable. We prophesy for the present edition an even greater popularity than for former editions. Dr. Potter deserves well of the profession of America for the work he has done in making a very practical handy reference book of three important subjects.

BOOKS RECEIVED.

The MEDICAL NEWS *acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the* MEDICAL NEWS *will shortly appear.*

THE NURSING PROFESSION. Edited by Sir Henry Burdett. Fourth Year. The Scientific Press, London.

EIGHTEENTH ANNUAL REPORT OF THE BUREAU OF ANIMAL INDUSTRY. 8vo, 706 pages. Illustrated. Washington, D. C.

THERAPEUTICS OF DRY HOT AIR. By Dr. Clarence Edward Skinner. 8vo, 200 pages. A. L. Chatterton & Co., New York.

TRANSACTIONS OF THE AMERICAN ORTHOPEDIC ASSOCIATION. Vol. 15, 1902. 8vo, 216 pages. Illustrated. Philadelphia.

THE PRACTICAL TREATMENT OF STAMMERING AND STUTTERING. By G. A. Lewis. 8vo, 415 pages. Illustrated. Detroit.

THE PROCEEDINGS OF THE CHARAKA CLUB. Vol. I. 8vo, 97 pages. Illustrated. William Wood and Company, New York.

ANATOMY. By Dr. William H. Rockwell, Jr. 8vo, 620 pages. Illustrated. Lea Brothers & Co., New York and Philadelphia.

A TEXT-BOOK OF NURSING. By Clara Weeks-Shaw. Third Edition. 8vo, 396 pages. Illustrated. D. Appleton & Company, New York.

ANNUAL REPORT OF THE DEPARTMENT OF THE INTERIOR. Commissioner of Education. I. 1901. Government Printing Office, Washington.

THE PRACTICAL MEDICINE SERIES OF YEAR BOOKS. Vol. II. General Surgery. Edited by Dr. John B. Murphy. The Year Book Publishers, Chicago.

DISEASES OF THE EYE. By Dr. G. E. DeSchweinitz. Fourth Edition, 8vo, 773 pages. Illustrated. W. B. Saunders & Company, Philadelphia and London.

CANCER AND OTHER TUMORS OF THE STOMACH. By Drs. S. Fenwick and W. S. Fenwick. 8vo, 362 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia.

A TEXT-BOOK OF PHARMACOLOGY AND THERAPEUTICS. By Dr. A. R. Cushney. Third Edition. 8vo, 755 pages. Illustrated, Lea Brothers & Co., Philadelphia and New York.